PC REVIEW

NOVEMBER 1994 • £3.95 $8.95 DM19.00 17.95 HFl

DOOM 2
REVIEWED OF COURSE

LORDS OF THE REALM
CYCLEMANIA AND SIMON THE SORCERER ON CD

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IF YOUR CD-ROM IS MISSING, CONSULT YOUR NEWSAGENT

From the creators of Alone in the Dark

LITTLE BIG ADVENTURE

A magical new quest

THE EASY INTERNET GUIDE

- Giant modem group test
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World Cup Golf is an amazingly-accurate simulation specifically-designed for CD formats. Utilizing full motion video images rendered on SiliconGraphics machines, it plays as well as it looks, and it looks brilliant.

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World Cup Golf faithfully re-creates the format of the actual event but offers many other options.

- 15 alternative championship formats.
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  Edge.
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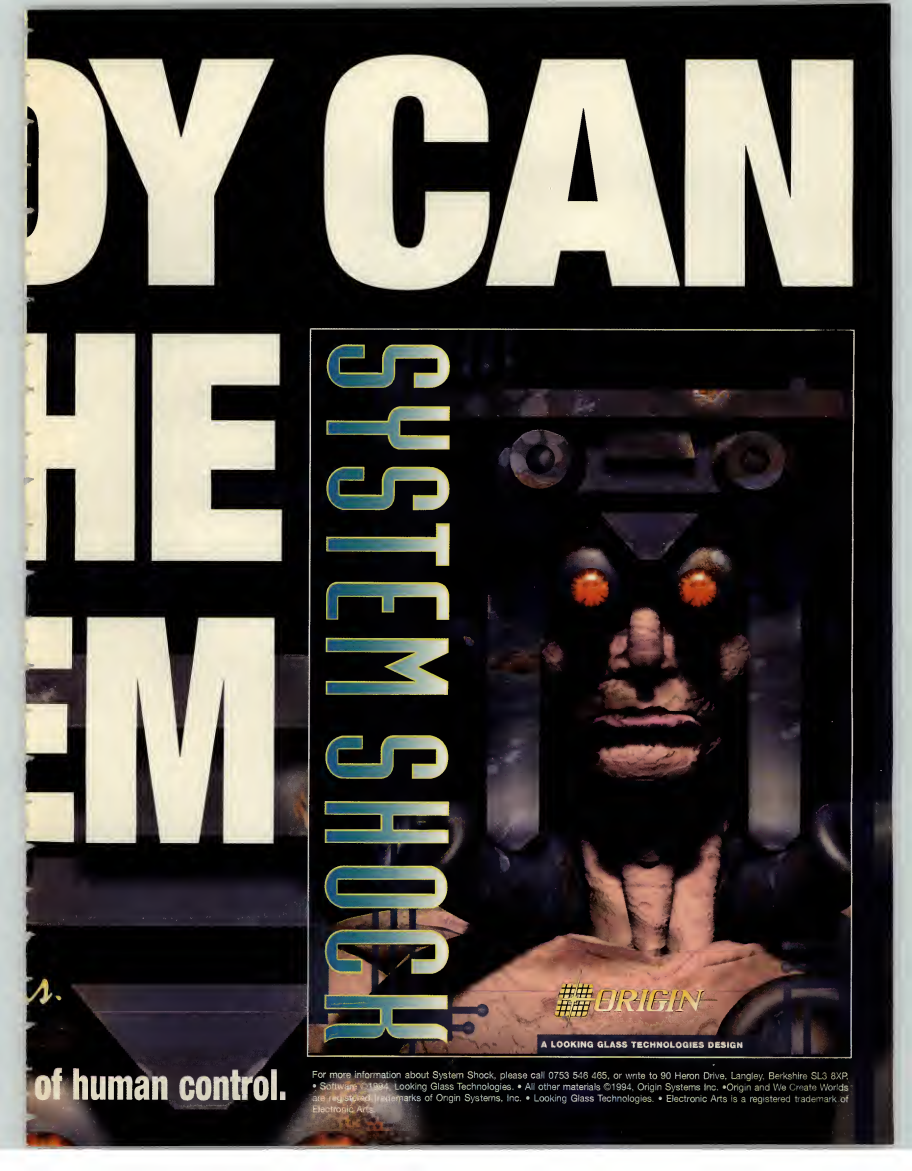

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Win a Canon colour printer!
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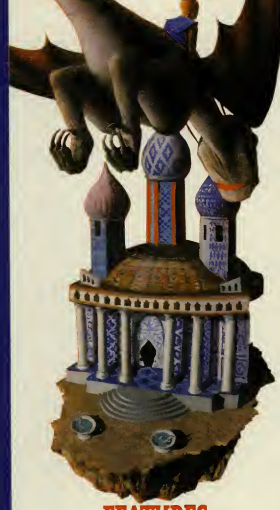

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Everybody's doing it, and if they're not, they're talking about it. So don't sit at home alone with your PC, get out and join the big wide world of the Internet. We'll get you out of your rut and netsurfing down the information superhighway.

37 Strategy games
Simon Shaw is a long-time strategy game addict, with some personal views on the genre and 12 top world builders to recommend.

42 Multimedia: the way forward
The tide may be turning for CD-ROM reference programs. Five brand new releases from Dorling Kindersley look set to define new standards for this type of program. Christina Erskine guides you through the range, and talks to the company about its multimedia plans.

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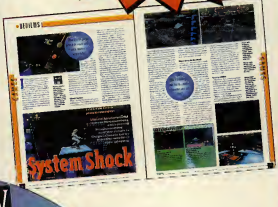

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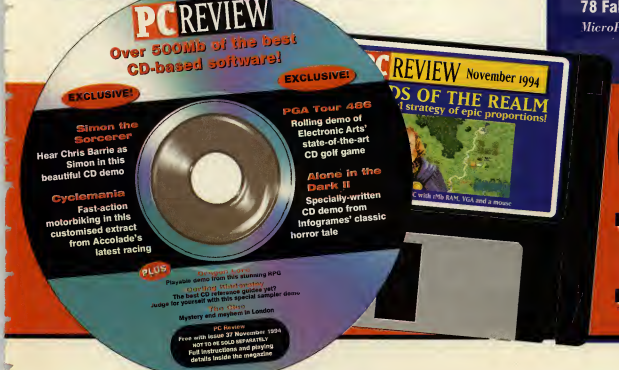
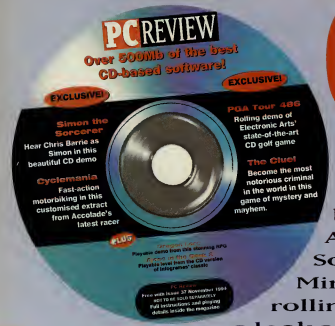


COVER DISKS



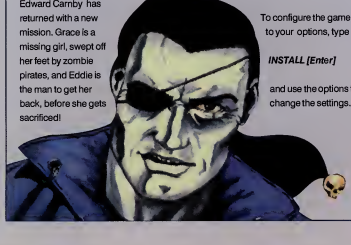
Cover CD

Welcome to another magnificent PC Review CD-ROM. This month it's a veritable gamefest, as we bring you full playable demos of Accolade's Cyclemania, Simon The Sorcerer from Adventuresoft, Mindscape's Dragon Lore, and a rolling demo of PGA Tour Golf 486, plus a look at the CD version of the classic horror yarn, Alone in the Dark 2

ALONE IN THE DARK 2

This month sees the release of the incredible CD-ROM version of Alone in the Dark 2, complete with speech, CD music and a far more balanced game. So, by way of celebration, here's the maze section for all you CD-ROM owners — complete with sound effects, although unfortunately, the space available does not permit us to include the full music version.

After getting through the haunted mansion in the original game, Edward Carnby has returned with a new mission. Grace is a missing girl, swept off her feet by zombie pirates, and Eddie is the man to get her back, before she gets sacrificed!



How to start

Log on to the CD directory (usually D:), and type

ALONE [Enter]

This will copy the game files to your hard drive, so you'll need 12Mb spare. Now to run the game, go into the directory you installed to and type

AITD2 [Enter]

To configure the game to your options, type

INSTALL [Enter]

and use the options to change the settings.

How to quit

When you either complete the demo or get killed, you will be returned to DOS.

Hardware required

386 minimum, 2Mb RAM, VGA and 565K base memory.

Controls

Movement is controlled with the cursor keys. Up and down move you forward and back, while left and right rotate you. Pressing return brings up an inventory screen. Here you can select the fight option. Press the space bar on the main screen to punch or kick. In fight mode the up arrow lets you head-butt, the left and right arrows for punch and the down arrow is for kicks.

To use a gun, if you have one, go to the inventory screen, and select an ammo clip to load the gun, and then use the gun itself.

On the main screen, just press space to fire.

A word of warning: at the start of the maze you will find a teleport. In the game this takes you to the other end of the maze. Using this in the demo will only take you to the end of the demo, and why would you want to do that?

How to use your free CD-ROM

HOW TO LOAD YOUR PC REVIEW COVER CD

1. Take the PC Review cover CD out of its plastic case.
2. Insert it into your CD-ROM drive and close the drive tray.
3. Wait for the light on the front of the CD-ROM drive to go out.
4. Type D:> [Enter]
5. Now select the program you want to load from these pages, and type the file name in the How To Start section of the instructions for each game. This will either run the installation program required, in the case of games that need to copy files from the CD-ROM to your hard disk, or run the program directly from the CD-ROM.
6. When installing the Simon The Sorcerer demo, you don't actually need to copy the graphic and sound files on to your hard disk, but the game will run much faster if you do.
7. The Clue! is the floppy disk demo, so don't panic if you don't hear any sampled speech.
8. Make sure you have around 15Mb free on your hard disk. Even those programs which run directly from the CD may need to create a directory on your hard disk to hold installation files.

PGA TOUR GOLF 486

Golf simulations have always been popular on all machines, but none have ever been as popular as PGA. Over the last few years, PGA has been steadily improved and upgraded, and now the CD-ROM version features nothing less than photo-realistic courses, along with captivating and realistic gameplay.

How to start

Go into the directory on the CD where the PGA486 demo is located, and type

INSTALL [Enter]

to run the install program. You will be asked for the directory you wish to install to (typically C:\PGA486) and then the program will copy a few files to your hard drive. Once that's done, just type

PGA486

to run the demo.

How to play

Unfortunately you can't. This demo is merely a rolling presentation of what PGA can do, so all you need to do is sit back and enjoy the show.

How to quit

To leave the demo, just hit Esc.

Hardware required

386, VGA graphics, at least 8Mb of RAM and 13 Mb of free hard disk space. The demo will write to the hard disk when creating the photo-realistic views, and this can take up quite a bit of room.

PCGAMES

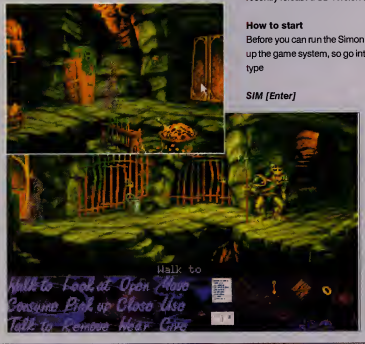
If you play games on your PC, you've got to read PC GAMES!

November Issue out now!

SIMON THE SORCERER

Adventuresoft

Come on, be honest. Who hasn't actually heard of Adventuresoft's superb comic graphic adventure in recent months. Not only is it a damn fine game on floppy, Mike Woodroffe has gone one better by calling in the voice talents of Chris Barrie and Spitting Image's Roger Blake, along with a cast of dozens to pep up the game beyond recognition for the CD-ROM version. A sequel is due out in February, so here's a chance to play a segment from the recently released CD version of the first game.



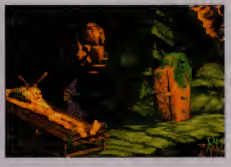
How to start

Before you can run the Simon demo, you'll need to set up the game system, so go into the CD directory, and type

SIM [Enter]

This program will ask you if you want to copy the game files from the CD to your hard drive. You'll need about 1.2 Mb free if you want to do this, and it does improve the speed of the game somewhat.

Once that's done, all you need to do is choose your sound card, and you can run the game by selecting the directory in which you have installed Simon, and type



SIMON [Enter]

How to play

It's all rather easy, really. The group of icons on the left at the bottom of the screen are your Simon control buttons and the group of icons on the right at the bottom of the screen is your inventory.

To get Simon to perform an action, click on the command you want from the list with the left mouse button, and then click on the item you want to perform the action with.

Hardware required

386, VGA graphics, 1Mb RAM, most major sound cards supported.

DRAGON LORE

Dragon Lore is the latest game from Cryo, the Paris-based software house responsible for Dune and MegaRace. This stunning adventure is set in the mythical world of dragons and monsters, and you take on the role of Werner, the son of a murdered nobleman who must avenge his father's death and reclaim the family castle.

How to start

Go to your CD directory and type

DRAGON [Enter]

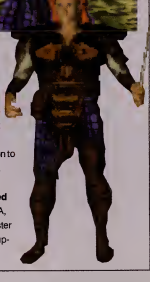
The game will load and run from the CD-ROM.

How to play

Movement is controlled via the mouse. Move the dragon-shaped cursor to the top of the screen to move forward, the bottom to move back, the left to move left, and so on. Click the left mouse button to complete the manoeuvre.

First, talk to the man in front of the hut by clicking on him with the right mouse button. He will tell you to find a bowl so that he can milk the cow. Then pick up the sword by moving the cursor over it and clicking the right mouse button. The cursor will change into a sword: to put it into your hand, right-click the sword in the top left-hand corner of the screen and then left-click it into your character's left hand. Right-click to exit the inventory.

Don't talk to anyone while you are holding the sword because you will attack them instead.



How to quit

Hit both mouse buttons together to exit the demo.

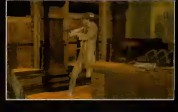
Click the left button to return back to DOS.

Hardware required

386, 4Mb RAM, VGA, mouse. Sound Blaster and compatibles supported.

THE FIRST TRULY INTERACTIVE MOVIE

UNDER A Killing Moon



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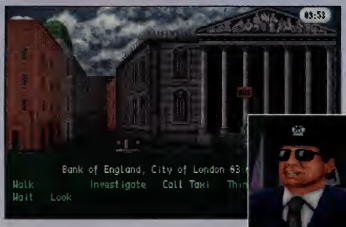
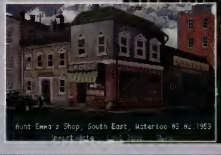
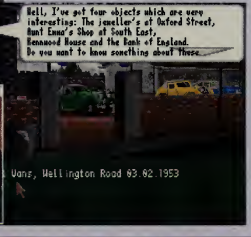
THE CLUE







Unfortunately the CD-ROM version of this magnificent adventure wasn't quite ready at press time, but we couldn't let this month go by without letting you at least play a demo of this superb adventure. You play a small-time thief just arrived in post war London, determined to make a career out of being a criminal, and your aim is to become a master criminal. So it's refreshingly politically incorrect as well.

How to start

To get The Clue up and running could not be easier. All you need to do is log on to the CD directory and type:

CLUE [return]

The game then loads!

How to play

The icons at the bottom of the screen are used to move between locations, view items and people and stake out buildings.

If you click on the think icon, you can look back at everything you've seen and done. In the many situations where you are involved in conversation, the dark arrows within the text box at the top of the screen let you scroll through the text. The game is controlled with either mouse or keyboard.

Hardware required

386, VGA graphics, 1Mb RAM, most major sound cards supported.

CYCLEMANIA

Imagine tearing along winding mountain roads and motorways like there was no tomorrow. Well now you can. This huge playable track from Cyclemania lets you race a single lap against five other bikers, going for the fastest time possible, but watch out for those oncoming cars and trucks!

How to start

Log on to the CD directory and then type

MANIA [Enter]

to start the installation procedure. The program will ask you which directory you wish to install to. Press return to go with the default directory (c:\cycle) and the installer will then copy the necessary files to your hard disk. Now log onto the hard disk, go into the folder where the files are kept and type

CYCLE [Enter]

to run the demo.

How to play

Use the left and right cursor keys to steer your motorbike, and use forward and back keys to accelerate and break. Escape takes you back to the menu.

How to exit

Press Escape or select the exit icon.

Hardware requirements

386, colour VGA, 4Mb, Most major sound cards supported.

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DOMINUS

YOU'LL NEVER PLAY THIS GAME AGAIN!

THE NEW STRATEGY GAME THAT'S DIFFERENT EVERY TIME YOU PLAY.

Dominus is a new genre of strategic war game. A real time simulation that blends the best elements of fantasy role playing and hand to hand combat, Dominus allows you to stand back and run the war from above, or grab a weapon and join the fray. So you can fight the way you want. And with four difficulty levels, Dominus is fun for first-time players and war game veterans alike. Defend your domain from invading clans by deploying monsters, casting spells, setting traps, capturing your enemies and interrogating them in the dungeon. Then combine your helpless prisoners with your hideous monsters to create your own more powerful hybrids. Each of your decisions causes different strategies and reactions in your enemies, so every game is unique. Grab your sword and leap into Dominus.

It's a whole new breed of gameplay!

CD-ROM & IBM PC

386 or higher
25 MHz or above (33 MHz recommended)
VGA videocard
DOS 5.0 or higher

CD Drive – single speed
(double speed recommended)
SoundBlaster™ and 100% compatibles
Mouse or Keyboard interface
Hard-drive space required, 35Mb

Screenshots are only intended to be illustrated [illegible] graphics which may vary considerably [illegible] the domain in quality and appearance [illegible] to the computer's specifications.

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Cover disks

This month's fantastic cover disk demo is Lords of the Realm from strategy experts, Impressions. Why one demo, you ask? Because it's absolutely enormous, we reply, with a perfectly straight face.

LORDS OF THE REALM (IMPRESSIONS)

3.5" disks only

The year is 1300AD, and the warring barons are at it again. Our exclusive demo of Impressions' huge new mediaeval strategy game cum kingdom builder gives you (and up to five other players) the chance to prove your worthiness to sit on the throne of England. All you have to do is rule your own people wisely, and defeat the five other nobles who also happen to have royal ambitions . . .

How to start

Select the game from the menu and the disk will prompt you for a directory to install Lords of the Realm in to.

When this is done, log on to that directory on your hard disk and type Demo [Enter] to extract the game files.

Once the files have been extracted, you simply type Lord [Enter] to start the game.

Follow the on-screen prompts to set up the game (eg, player name, shields, difficulty levels and so on). Then away you go.

How to play

Ah, ahem . . . bit of a biggie this one. Lords of the Realm is a comprehensive strategy game with an equally comprehensive set of commands and icons. To cover everything in detail would probably take a manual bigger than this entire magazine.

The main screen, like the one above, shows the overall map of the various territories.

The five icons on the left hand side of the screen toggle on/off the following options: show flags, armies, battles, castles and show merchants.

Simply by clicking anywhere on the map, you can zoom down in to the kingdom level of the game. There, you simply scroll around the map using the mouse: county borders are shown as gold lines, forests by dark green areas.

The building with the cross on it in each county represents the town that has to be taken if you want to capture the county. The animals represent what is being farmed in a given field.

The soldiers represent . . . soldiers, funnily enough.

Right, so what can you do? Well, the five icons at the bottom of the kingdom screen (shown left) will take you deeper in to the game system.

The various menus that you can find are shown on the opposite page, and they are generally pretty intuitive, but the idea is that you can control almost all the activities of your population: set taxes, decide what crops to grow, forge weapons, and of course, recruit

It's combat time. Now, on screen you'll see a pile of their blokes milling about, and your own men loitering with equal lack of intent.

To get some action out of them, select the particular troop you require with the cursor, then apply one of the command icons shown on the left. The icons (reading across, from the top) run as follows, change formation, freeze/unfreeze time, move, shoot, formation, parley and so on.

soldiers, armourers, miners, carpenters and so on.

Marshalling your resources is just as important as any military action, but if you want to get into the hack 'n' slash of it, you first need to raise an army (see the menu screens) then set them off against your rivals.

When the fight starts, you will be given the option to take command if you wish — and this will drop you in to the combat screen (see panel, left) where the miniature armies beat each other to a pulp.

Combat is pretty straightforward. Select the troops you want to move using the mouse. Then click on the relevant action icon (see right), be it attack, retreat, offer terms and so on.

And that about wraps it up.

Remember however, that In this demo you obviously don't get some of the features you'll see in the full game the most notable of which is the castle building and siege options.

So, govern well, keep your people fed, make the odd alliance here and there, and beat off all contenders to the throne.

A doddle. Long live the King, er, Queen, er . . .

How to quit
Press Alt-X [Enter]

Hardware needed
Minimum 386, 1Mb RAM, VGA graphics and a mouse. Also 5Mb of hard disk space.

Problems with your coverdisks? See over the page for help.

Set up your food production.

Assign men to farming duties.

Set the rest at useful tasks like mining.

Trading options are numerous.

Raise (or hire) the best armies

Keep a watchful eye on your accounts ...

THE ULTIMATE HARD DRIVE FOR PC

THE ORIGINAL
Micro Machines
SCALE MINIATURES
™

"Consistently entertaining and relentlessly addictive - a fabulous racing game"
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Codemasters
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HOW TO USE YOUR COVER DISKS

1. Put your PC Review cover disk into your floppy drive,and log on to it, ie, type

A: [Enter]

(Your floppy disk drive might be called B:, in which case substitute B: for A: above.)

2. Type PCR [Enter] to bring up the installation menu (above right).

3. Using the cursor keys, select the program you wish to install from the on-screen menu. Check the disk and PC requirements listed at the foot of the screen; you will get an error message, for example, if there is not enough space on your hard disk to install the program. Press Enter to confirm your selection.

4. The programs on the cover disk are compressed. The installer will decompress these files and copy them to your hard disk. After choosing the program to install, you will be prompted with the name of the drive and directory that the installer intends to decompress the program you've selected to. There's no need to change this unless, a) your hard drive is not called C:, or b) you have a directory with the same name as that suggested on-screen. If you want to change this default, just backspace over the installer's suggestion and type in your preferred destination.

5. The program files will now be decompressed and copied to your hard disk. After they have done so, you will see a screen explaining how to access the demo from your hard disk. There are also instructions for starting and playing each program on these pages. Press Enter to return to the PC Review installer menu.

6. Either press Esc to quit the installer, or use the cursor keys to select another program, and run through steps 3-6 again.

COMMON PROBLEMS

I can't free up enough system memory.

You can check the amount of free memory by typing MEM at the C:> prompt. If the number listed as memory free at the end of the resulting screenful of numbers is under 550,000 bytes, you may have difficulties running the programs on this disk.

If you think you have a memory problem, first make sure that you don't have any memory-resident programs open in the background. If you don't fancy editing your Config.sys and Autoexec.bat files just to run our cover disk, you can always make a boot disk, which is a quick and easy way to make a disk containing just the bare bones of DOS to run your PC and lots of free system memory.

A detailed description on making a boot disk is given in our technical help section on page 130. What follows is a quick guide:

Put a blank, formatted floppy disk into your disk drive. At the C:> prompt, type

SYS A: [Enter]

This will copy the three system start-up files that you need to boot the PC over to the floppy disk. You can now start up your PC from this boot disk — just put the disk in the floppy drive and switch the PC on.

Note that because there is no Config.sys or Autoexec.bat file on the boot disk, you will have to load things like mice or sound card drivers separately.

The mouse doesn't work.

If your mouse cursor won't move at all, you either don't have the mouse loaded, or you don't have the correct mouse driver for this program. Either quit the program and load up the mouse, or if you don't have a compatible driver, you'll have to use an alternative control method.

I type in the correct command to start the game but it just says "Bad command or filename."

Nine times out of ten the reason is that you've typed the command from the wrong subdirectory. If you have a prompt on-screen that just reads C:>, and still says C:> even when you type CD [correct directory], then type in this command from C:>: PROMPT $p $g. This command should be in your Autoexec.bat and will show you which directory you're in.

HELP! MY DISK IS DAMAGED

Out of the thousands of disks we duplicate every month, a very small number may get damaged during transit. If you think your disk might be faulty, we'll replace it. Just pop the disk(s) in a jiffy bag with a self-addressed envelope and postage to the value of 28p (55p from overseas) and the form below (filled in), and send the package to the following address:

DiskXpress
Unit 17
Willow Court
Bourton Industrial Park
Bourton-on-the-Water
Gloucestershire GL54 2HQ

Please DO NOT send the disks back to PC Review — we don't hold stocks of spares.

Name .....

Address .....

.....

.....

.....

The disk on my copy of PC Review was damaged. Please send me a replacement — I enclose return postage to the value of 28p (55p if overseas) and the original disk.

HELP! I CAN'T GET THE DISK TO WORK

If you're having problems finding your way round the disks, or making them work with your PC, try the PC Review disk helpline.

Disk helpline:

(0451) 810788

The helpline operates between 3.00pm and 5.00pm weekdays.

Please note: this is a newish helpline number. Don't call the old number — you won't get through!

ARMORED FIST

Scope out the terrain.
Slew your turret.
Lock on target.
And brace yourself for a fire storm!

You're in the heart of an advanced fighting machine. Peering through the thick smoke billowing off your last victim, you feel you're being watched. Switching to thermal shows something hot behind the trees ahead. Advanced optics zoom in and reveal a Soviet T-80 tank turning its turret toward you. Now is not the time to hesitate... Lock and load. FIRE!

You're [illegible] on the digital [illegible] of the future in this modern tank simulation from NovaLogic™ (the creators of Comanche™, WolfPack™ and Ultrabots™).

Strap on your helmet for the ride of your life!

- Encounter startlingly realistic pre-built missions or construct your own. Dig trenches, lay mines, even plant trees.
- Choose American M1A2 Abrams main battle tanks, M3 Bradley IFVs equipped with thermal sights, Russian T-80 tanks, or BMP APCs equipped with image intensifiers.
- Engage your enemy in accurate battle environments where you encounter translucent smoke, explosions and grenades.
- Command multiple tanks over 3-D, Voxel Space™ (patent pending), terrain and call in remote artillery or tactical air support to ensure victory.

Available for PC 3.5" and PC CD-ROM

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News

Police "can't cope" with computer porn

More police resources and training are needed in a bid to combat the growing threat of computer pornography, says the European Software Publishers' Association (ELSPA).

Most forces are "hopelessly ill-equipped" to deal with the problem, according to ELSPA's Computer Pornography 'white paper' launched at the autumn European Computer Trade Show.

"Too few police forces in the UK have computer literate officers in their obscene publications units and those that do are so inundated with work that they only have the resources to tackle the most unpleasant paedophile computer pornography. A large amount of material has to fall by the wayside," says John Loader, chief investigator at ELSPA's crime unit.

"Because of the way that computer pornography is particularly accessible by children we believe that the Home Office should issue guidelines advising courts to interpret the Obscene Publications Act when dealing with computer pornography as if children were the intended audience," he adds.

Black market

The problem exists not with the commercial suppliers of entertainment and education software but with the 'black market' supply through outlets such computer bulletin boards and car boot sales and markets.

Pirate traders at car boot sales often provide lists of stock which includes 'adult' sections, according to ELSPA. Material seized by investigators includes software with titles such as Weird Dreams, Party Games and Animal Farm. All included images of hardcore pornography. With the drastic fall in the price of copying equipment needed to cut CD-ROMs, this medium has also become available to the pornographers.

But much of this black market computer pornography consists, according to the white paper, of images scanned in electronic form from paper-based pornography. Interactive pornography represents a "very limited threat" at the moment because of the costs of creating it.

How big a threat is posed by computer pornography remains unclear. A national survey of schools was carried out in June this year by the University of Central Lancaster to try to discover the extent. A questionnaire was mailed to 28,000 schools and 7,000 replies were received. The results suggest that 30 per cent of headmasters at secondary, all-boys schools were aware of computer pornography circulating in their school.

Elsewhere, Customs and Excise says that of 44,767 prohibited, indecent items seized by them in 1992-93, 144 were computer pornography. And since 1991 only 11 out of nearly 1,000 items referred to the Crown Prosecution Service under the Obscene Publications Act involved computer pornography.

ELSPA's 70 members already operate a rating system which advises parents of the suitability of the software for children. "ELSPA and commercial software publishers suffer guilt by association with black market computer pornographers, since both share the computer as their medium. That is why ELSPA is willing to put forward resources to help stamp out computer pornography," says Roger Bennett, general secretary of ELSPA.

ELSPA has set up a hotline on (0386) 833810 to deal with calls from anyone with information on computer pornography, and also pirated software.

ELSPA GUIDELINES

ELSPA has drawn up the following guidelines for parents who may be unaware of the problem of computer pornography.

1. Ensure your children always buy their software from reputable suppliers.

2. Avoid buying software products from car boot sales or other sources which could be difficult to return with a complaint.

3. If possible, examine the contents of disks/CD-ROMs. (ELSPA advises parents to learn some computer basics to enable them at least to examine file names.)

4. Remember, only computers are susceptible to black market pornographic software — video games consoles, for example, will not run computer pornography files.

5. Get involved with your children's computer activities so you know what they are doing.

6. Don't let the family computer be hidden away in your children's bedroom — place it somewhere where you can keep an eye on your child's activities such as the living room.

7. If you find your child with computer pornography, ask where it was obtained. Take the issue up with school authorities if it was obtained at school. If it was bought at a store or market contact your local trading standards officials. If need be, contact the police.

8. When buying commercial leisure software look for the ELSPA age suitability system labels. This will help you decide whether or not the product is suitable for your child.

9. Never buy, or allow your children to buy, software that may be pirated since you never know what else may be on the disk or CD.

French company Chargeurs buys 25% stake in Ocean

The French group Chargeurs has bought a quarter share in the veteran Manchester-based games publisher Ocean, as part of its growing participation in the entertainment business.

For Ocean, which has traditionally been strong in the field of licensed games (it has computerised many films, including the Robocop and Lethal Weapon series), the deal provides the investment required to compete in today's international — and increasingly CD-ROM orientated — market. Ocean itself has recently beefed up its PC-related business by buying part of DID, the development house responsible for TFX and Inferno.

Ocean founders David Ward and Jon Woods have seen their company grow in to an international publisher with a turnover of $90 million for the year ending July 31st 1994. Of the Chargeurs deal, Ward said, "It provides both strategic assistance and strengthens the company's balance sheet."

PC Review in CD split

This is the last issue of PC Review to carry both a 3.5" disk and a CD-ROM on the cover. From next month, we will be selling the magazine in two distinct versions, one with two high density 3.5" floppy disks, and one with a single CD-ROM mounted on the cover in a compact disc jewel case.

If you are a subscriber to PC Review, you should have received a letter from us asking you which version you would like to receive for the remainder of your subscription term. If you have not already had this letter, please contact our subscription hotline on (0858) 468811 to state your preference.

If you are a regular buyer of PC Review, all you should need to do is to select the edition of the magazine you prefer when you visit the newsagents. However, we have included a tick-the-box option on the newsagents' order form on page 146 and you can make sure that you get the right version by filling this in and handing it to your newsagent.

The floppy disk edition will cost £3.95; the CD-ROM edition will cost £4.95. While we know that readers have appreciated the free CD-ROM of the last few issues, we also know that disk-only owners have felt a bit bard done by.

Graham Taylor, publishing director of EMAP Images, says of the move: "By splitting PC Review, we should be able to give better value both to CD-ROM owners in the quality of the CD-ROM, and to non-CD owners with the disk."

● *The first floppy disk and CD-only editions of PC Review will be the December issues, which will be on sale on November 15, 1994.*

Colour bubble inkjet for £285

AMT Accel's new Colorjet 300 x 600 dpi bubble inkjet printer priced at £334.88, including VAT, makes it one of the cheapest printers currently available.

It can be fitted with an optional 70 page automatic A4 sheet feeder and comes with a driver for Windows 3.1 and RISC OS 3.1. It prints on A4 plain paper as well as envelopes, legal size paper and transparency materials.

Other features are a colour print speed of 2.5 minutes per page in fast mode; graphics resolutions from 75dpi (dots per inch); six built-in fonts; and a Centronics interface and cable. Nor will it take up much room on the desktop, measuring 125.2 x 342 x147 mm.

Contact AMT Accel on (0743) 890055 for more information.

EDITOR'S COMMENT

Last of the Independents

In our last issue, Tim Green charted the increasing inroads that multinational companies are making into the PC entertainment market, and even in the short time since then, two more companies have fallen for the charms of the corporates. The French conglomerate Chargeurs, which owns a stake in BSkyB among its many fingers in pies, has bought 25% of Ocean, the software publisher which itself recently bought 25% of developer DID (TFX, Inferno). Secondly, Renegade, the publisher fronting the Bitmap Brothers and Sensible Soccer, has been bought by Warner Interactive Entertainment. British programming talent, long renowned for its creativity, seems to be particularly in demand at the moment.

'Inevitable' is the word used most often to describe the current rush to sign up with larger and more diverse companies. The small independent software house can no longer afford to fund its next game — which may not see the light of day for another two years — without an injection of cash. "It's almost as bad if people think you don't have money — even if you have", adds Dan Thompson of Renegade, putting a new gloss on an old problem. Meanwhile, the mainstream entertainment companies fear that the next great shift in leisure pursuits will pass them by unless they buy into the companies with expertise. They're also acting a bit twitchy about the Internet and interactive music at the moment, and for many of the same reasons.

For the games player, the fear is usually that moves by independent software houses into the mainstream will adversely affect the quality of their output. If Tharg Software is bought by the company which owns the licence to six breakfast cereals and a couple of cuddly toys, then Tharg Software will be forced to develop games about cereals and cuddly toys, and we will never see the likes of Doom again.

Well, it ain't necessarily so. Or, at least the track records of the corporate, non-independent software houses don't bear it out. In the mid-80s, two of the best software publishers, which championed innovative programming, fresh ideas and gave their programmers the time (and investment) to see these ideas through, were Telecomsoft (a division of BT) and Mirrorsoft (a division of a division of companies that ultimately led to Robert Maxwell). Sure, they had their turkeys, but those of you who remember The Sentinel, or Tetris, or the 8-bit conversions of Elite could hardly argue that these constituted mere licence fodder.

Of course, big bucks are hardly a guarantee of excellence. But they do give developers a bit of breathing space to work on new systems, or to buy in and train new talent.

Also from the consumer's point of view, anything that brings PC games closer to the mainstream of entertainment surely has to be a good thing.

I for one am heartily fed up with the image of the (male) anorak-wearing social outcast with the pixellated brains.

Surely one of these multinational companies, so adroit at image manipulation in other areas, can make PC gaming appear dangerously chic.

■ **Christina Erskine**

Chameleon sounds off

An all-in-one fax/modem/voice and audio PC expansion card has been launched by Blue Micro at £299. The ROMBO Blue Chameleon uses Mwave DSP technology with on-board stereo audio to produce a 16-bit Windows stereo sound system. It can record and play back speech and sound in a range of standards, from 8-bit mono to CD quality 44KHz 16-bit stereo. Data is stored to the hard disk and software compression minimises the space taken up.

As a modem the Chameleon operates as a 14,400 bps data modem or 9600 bps send and receive fax modem.

Contact Blue Micro on (0604) 603310 for more details.

PC CHARTS

Disk-based games

1	Space Simulator	*Microsoft*
2	Doom (full version)	*Id*
3	Outpost	*Sierra*
4	TIE Fighter	*LucasArts*
5	Overlord	*Virgin*
6	SimCity 2000	*Maxis*
7	Kingmaker	*Blue Byte*
8	Theme Park	*Bullfrog/Electronic Arts*
9	FIFA Soccer	*Electronic Arts*
10	Cannon Fodder	*Sensible/Virgin*

CD-ROM games

1	Outpost	*Sierra*
2	Theme Park	*Bullfrog/Electronic Arts*
3	Falcon Gold	*MicroProse*
4	Civilization	*MicroProse*
5	Gabriel Knight	*MicroProse*

Charts compiled by Virgin Retail

Spielberg invests in software house

Movie director Steven Spielberg, already involved in co-designing The Dig with LucasArts, is now turning his attention to educational software. He has made an undisclosed "equity investment" in the US multimedia developer Knowledge Adventure Inc. "I've been following the growth in multimedia software industry with great interest," says Spielberg. "In particular, I've been impressed with the work being done at Knowledge Adventure. I'm anxious to participate in innovative, enriching educational software."

Knowledge Adventure's past releases include 3D Dinosaur Adventure, Science Adventure II, Speed Adventure, Discoverers and BUG Adventure.

The software house's products are distributed in the UK by Guildsoft. Managing Director John Cave said that with Spielberg's "experience in capturing the imagination of young people, the company will be able to create the most compelling software for children." Guildsoft can be contacted on (0752) 895100 for more information.

Sign of the Times

One Year Ago

The promise of TV quality pictures on your PC was at last becoming a reality with the release of Sigma Design's ReelMagic (now RealMagic) video card, a technological breakthrough with the capability to spark a gaming revolution. We published our Top 100 Games of 1993 — with Day of the Tentacle (LucasArts/US Gold) taking top honours — "hilarious, inventive and absorbing." Alone in the Dark was second and Syndicate was third.

Two years ago

The Opus Leisure Station Plus offered value-for-money 486 PC power for less than £1,000. Meanwhile, it was a mixed month for software. The Lost Files of Sherlock Holmes (Electronic Arts) and Wizardry VII (Sir Tech/US Gold) picked up scores of eight. But Double Dragon III: The Rosetta Stone (Storm/Sales Curve) scored just two, failing to improve the PC's then poor reputation for arcade-style games.

Three years ago

November 1991 . . . and the first issue of PC Review hit the newsstands with the mission to become the one-stop guide to PC entertainment and the leisure computing market. Three years and 37 issues later that's still our mission. The big name games are still remembered — Wing Commander 2 (Origin), Civilization (MicroProse) and Pools of Darkness (SSI). But do you recall Mad TV (Rainbow Arts) or Wrath of the Demon (Readysoft)?

3DO launches in UK at last

The 3DO Interactive Multiplayer — which can play games, audio CDs, photo CDs and video CDS — has now been launched in the UK with a £399.95 price tag.

Meanwhile, the 3DO Company estimates there is now an installed base of 200,000 machines worldwide.

"The European market is fundamental to The 3DO Company's aim of establishing 3DO technology as a worldwide consumer standard," said Robert Faber, managing director 3DO Europe.

At the moment there are 70 titles available and Mr Faber predicts 10 new titles to be released in the UK each month to Christmas.

In Brief

- **Entertainment Developers Expo 95, a two day interactive entertainment conference, will be held at London's Novotel hotel on January 29 and 30. Contact Digital Media International on (081) 995 3632.**

- **Spectravideo's new Aerospace speakers (below) — featuring 15 watt output per speakers, magnetic shielding and cable remote control, have gone on sale price £29.99 including VAT. Contact (081) 902 2211 for details.**

- **Orchid Technology, the Californian-based developer, designer and manufacturer multimedia technology, has merged with system board maker Micronics Computers.**

- **7,000 Clip Art Images, 200 Great Games for Windows, 4000 Icons and 500 Fonts for Windows are four CD-ROM titles by US company Crystal Vision, which have been released in the UK by Guildsoft, priced at £14.99. Contact (0752) 895100 for more information.**

- **The prices of all Logitech hand-held and desktop scanners have been cut by up to 25 per cent. For example, the ScanMan Color and ScanMan EasyTouch now sell for £250 and £155 respectively.**

- **Online information service CompuServe is publishing a CompuServe CD-ROM disc giving users a sound, graphics, animation and video multimedia "enhancement". At first the bi-monthly CompuServeCD will only be sold on subscription, at £5.95. Contact CompuServe on (0734) 391064.**

- **Owners of the original Journeyman Project can now upgrade to a Turbo edition for just £9.99 which, claims publisher US Gold, is 300-400 per cent faster. Cheques should be sent to Journeyman Project Exchange Offer, US Gold Customer Services, Holford Way, Birmingham B6 7AX.**

  The exchange will be fulfilled with 28 days of the Turbo edition being available for retail. The offer only applies to residents of the UK. US Gold can be contacted on (021) 606 1800 for details.

THE COOKE REPORT

What makes a good game really great? And what makes a complete stinker?

You'd think that the difference between a good and bad game would be the sort of thing that most people in the games industry had strong and conflicting views about. After all, if you ask a gaggle of theatre producers what makes a good performance, you're going to get a gaggle of different answers. But at least you'll *get* answers . . .

Most games producers and programmers have a sort of gut feeling about products, but when asked, they tend to mumble about 'playability' and then get back to the keyboard.

The idea that the games industry has some kind of arcane knowledge about interactivity is keeping it alive and wealthy. But my argument is that unless we start to be more articulate about what makes good games, we will find it more difficult to write better ones. So, having pestered the games community with questions about playability, here are some of the more articulate answers ...

"A great game is a fusion of seeing, hearing and doing. It succeeds if it establishes a close relationship between the player, the characters in the game, and the game's environment," says long-time industry writer Gary Penn. "Tactile feedback is one of the most important factors, for example. The choice of controller really makes a difference: mice are good for controlling floaty things, like the craft in Zarch/Virus. Using the joystick in BoulderDash was a joy — you'd be leaning right over it in an attempt to go faster."

Peter Molyneux at Bullfrog also subscribed to the 'relationship' view, but expressed in very different terms: "What makes a great game has to be, and always has been, playability," he says. "That means, quite simply, any game that you sit down in front of and understand within 30 seconds; can play using all its features within two minutes; will be challenged by for at least 40 hours. In short, it has to be both easy and complex; intensely interesting without being intimidating."

Along with several others, Peter also raised the 'must have one more go' idea. A great game doesn't just have good presentation, it must also keep you playing. "Addiction is vital," says Peter, "and whatever people say, it can be engineered. For example, when we were testing Magic Carpet, we had about ten spells on each level. But we found that by putting only one spell on each level, the player was given more incentive to proceed. RPGs are the best example: you start with a wimpish character and have to build it into a godlike being."

Those ten things in full

Here, then, is a tentative list of Ten Things That Make A Great Game. And don't forget to send in your own suggestions for next month's column, where we'll publish the readers' list of Ten Things That Make A Turkey.

1. Good graphic design. The game must look good, and the screen layout, icons, character and environment graphics must suit the gameplay and its objectives.
2. Good sound effects and music.
3. Clear genre position. Producers know this, programmers sometimes forget it. Your audience must have a feeling for what 'sort' of game they're playing. This determines their expectations and therefore to some extent their enjoyment.
4. Control. As Gary says, it's all down to tactile feedback. The controller used must suit the action.
5. Rich and varied environment. For us to explore and tinker with.
6. Clear and logical rules. No sudden deaths or senseless responses.
7. Well-paced reward system. Bonuses, new places to explore and so forth.
8. Ease of use.
9. An objective. Essential for a sense of achievement.

And what about number ten? For those people who still dispute whether games are an art form, I'll leave the last word to Joe Bonar of Probe Software, who came up with what I thought was the best quote of all:

10. "It's the love and thought that goes into it, really. And I don't think there's anything you can add to that."

■ **Steve Cooke**

Python on CD

And now for something completely different... what is being hailed as the first "interactive comedy show" — also known as Monty Python's Complete Waste of Time CD-ROM — is about to be unleashed on an unsuspecting public.

Set to tie in with the 25th anniversary of the Monty Python's Flying Circus TV shows, the CD-ROM has been produced by American developers 7th Level and film director Terry Gilliam, who was co-creator and animator with Monty Python.

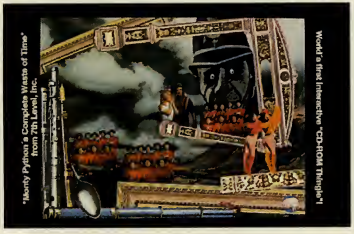
Says Gilliam: "It's one of those annoyingly silly things that you can spend hours on, trying to work out what it's all about. And when you discover it, you realise you've wasted a great chunk of your life and can never get it back."

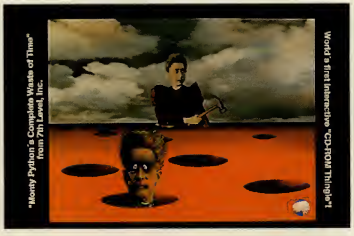
The CD-ROM features specially created comedy animation, sketches from the show — including Dead Parrot, Cheese Shop, Nudge Nudge — six animated interactive scenarios, spoof arcade games and songs, Lumberjack, Llama and Spam included.

There is also the Secret of Intergalactic Success, a series of game challenges with the chance to win cash and prizes, and The Desktop Pythonizer, a collection of dialogue lines and sound effects, screen icons, animations and pre-recorded telephone messages.

Terry Gilliam says of the collaboration with 7th Level: "I wasn't excited by interactivity until I started talking to Bob (Ezrin, executive vice-president of 7th Level) about the project. I thought everybody was kidding themselves. The nature of what Monty Python did in the anarchic fashion of our shows, coupled with 7th Level's product concept, again gives us the freedom to shock, surprise and push comedy to the limit."

Monty Python's A Complete Waste of Time is distributed here by Longman Logotron, price £54.99. Contact (0223) 425558.





The plane facts of air war

What is claimed to be the most comprehensive survey ever published on military aircraft in any medium is to be released shortly on CD-ROM.

The first volume, Warplanes, Modern Fighting Aircraft is available now from Mindscape, price £54.99. A second volume, Warplanes, From the Cold War to Vietnam, is due for release later in the year.

Warplanes, Modern Fighting Aircraft features technical and service data on more than 500 aircraft — including the A-10 Thunderbolt, F-16 Falcon and Soviet SU-27 — and in excess of 200 weapons systems; more than 1,000 full screen photographs; an hour of live action video; 3D rendered models of aircraft and military airfield; and examinations of the role of aircraft in warfare, including Operation Desert Storm and the Falklands invasion.

The CD-ROM is produced by Maris Multimedia, creator of the Red-Shift Multimedia Astronomy title, and published by Mindscape. Contact the company on (0444) 246333 for details.

Oops! Comet offer details revealed

In Issue 35, we offered you the chance to buy the CD-ROM version of Shadow of the Comet for over £10 *less* than the normal price. Wonderful, eh? But then we didn't tell you where to send your cheques, or credit cards details. Which was not so wonderful.

If you have been hankering after a copy of Shadow of the Comet on lovely shiny CD-ROM and you fancy the idea of getting it for £25.99 (inclusive of postage and packing), just dig out the coupon from page eight of Issue 35, fill it in and send it to Shadow of the Comet offer, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

My word!

The electronic publishing division of the Oxford University Press has released the Oxford Compendium on CD and the Oxford Reference Shelf on CD, both priced at £79.99.

The Compendium features the Concise Oxford Dictionary, Oxford Thesaurus, Oxford Dictionary of Quotations, Oxford Dictionary of Modern Quotations in their entirety.

The Reference Shelf contains 16 books, ranging from the Pocket Oxford Dictionary to A Concise Dictionary of Law, and A Word Gazetteer to the Dictionary of Computing.

Contact OUP on (0865) 267815 for further details.

Inferno deal is a scorcher

The game pictured here is Inferno, developed by DID, published by Ocean. It's a arcade-style flying game set in space, and frankly, it's a bit of a hot number. We reviewed it in Issue 36 and gave it the big eight rating, so you know it's well worth checking out.

Next month, PC Review has a very special deal in store for you, about which we're not allowed to say too much just at the moment, but it involves Inferno, your gaming pleasure and our innate generosity. So don't get your fingers burnt: see next month's PC Review for details.

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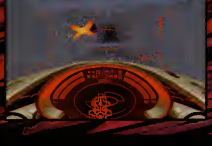
D I G I T A L I M

INFE

THE ODYSSE



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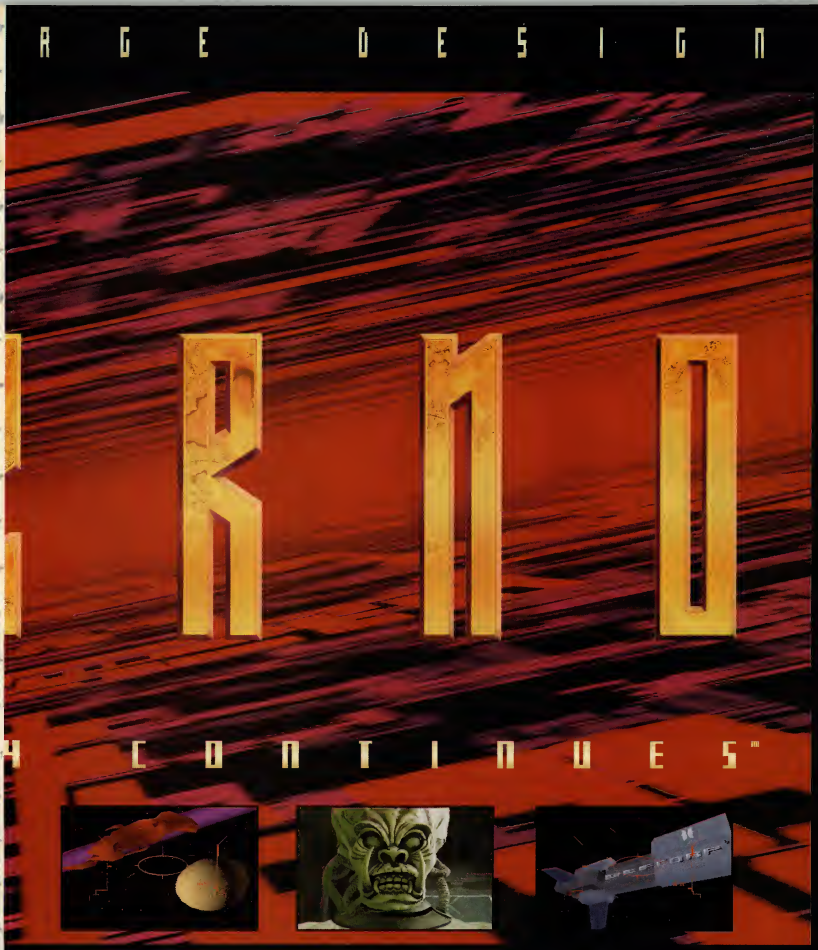


Free Inferno Video

Simply send in this page of the advert together with your name and address + a cheque or a postal order for £2.50 made payable to Ocean Software Ltd. to cover postage and packing. In return we will send you a fabulous 26 minute video that will show you Inferno in all its blazing glory + exclusive behind the scenes footage. Please allow up to 28 days for delivery. Mark your envelope Inferno Video Offer.

ocean®

OCEAN CD ROM
tracking the future

Launch into cyberspace

How you can get on the Internet

It's hip, happening, and there are nearly 10,000 new users every week. You could make a million new friends and access any information you desire. So runs the hype, anyway. If you feel even slightly curious about the Internet and how you can join the growing band of netsurfers on this world wide network, read on. We explain just how you, your PC and a modem can make it on the Information Superhighway.

Imagine going into your local pub for an evening and being able to talk about the subjects that interest you personally just by announcing that this is what you'd like to discuss this evening. Or being able to tune into any TV channel for information instead of just the one the landlord is running, or being able to play any game you choose on the machines or pool table. This is vaguely what the Internet is akin to, though unfortunately without the beer.

Once upon a time, the idea of hooking up a modem to your computer and dialling up remote bulletin boards in order to 'chat' to other bulletin board users and download files and software was considered the preserve of the deepest anorak. It was called 'comms' and every so often, magazines and newspapers would carry articles in which impassioned modem users would argue that being able to type messages to people you'd never met was really very exciting, and that tying up a 2400bps modem for an hour while it downloaded a piece of software was the future of data transfer.

Well, their day has come. Only now you don't dial up a bulletin board, you go netsurfing in cyberspace. You are no longer a bespectacled hacker who can configure a modem, you are an internaut whizzing down the fast lane of the information superhighway.

What has changed, apart from the terminology and modem speed, is the scope. Thanks to the Internet, you can hook up to a network of millions of computers, you can read and download information about just about anything, from the weather forecasts to scientific reports, White House press releases to pictures of Cindy Crawford. You can still type messages to people you've never met, but now they are just as likely to be in the US, Hong Kong or Australia as in your home country. If you're aware of the Internet's potential for disseminating specialist and academic information, then you're probably already accessing it regularly. As a leisure pursuit, however, the Internet can be a whole lot of fun as well.

This kind of graphic presentation is available if you have a TCP/IP link to the Internet and you're running appropriate software.

What is the Internet?

The Internet is a network of hundreds of thousands of computers worldwide. It is not a single network of bulletin board in itself, more of a network of networks. The Internet itself has developed over the last decade but the seeds for it were sown over 20 years ago, when academic institutions (mainly US universities) and US military research facilities set up the Arpanet as a means to share and exchange research data quickly.

In the 1980s, the National Science Foundation in the US set up the NSFNET network, using five linked supercomputers as the backbone of the new service. The existing networks connected to this, and then the links spread outside the United States to all five continents. Nor is the importance of sharing academic information confined to North America — the JANET network was set up in UK universities at much the same time as the Internet was growing in the US.

While the Internet is a loose entity and not policed or regulated by any one organisation (something which is currently the subject of heated debate), it hasn't just grown haphazardly or by accident. But it's not a bulletin board itself: you can't just dial it up from your PC. If you're using a PC and modem at home, then you need to have access to a service which in turn offers a link to the Internet. This link may give you full access, as with Demon Internet Services, or partial, as with CIX or Compuserve (see below for details).

By full Internet access I mean something that will ideally give you a TCP/IP link to the service. If you have a TCP/IP link, you can run software such as Mosaic, which gives you a customisable, graphic-based screen rather than a text-based interface. The difference in ease of use is huge. Mosaic also gives you the impression that you are using a service made for the 1990s rather than an arcane plain text interface. And once you're browsing the Internet, you'll find that suppliers' own illustrated screens much more friendly than looking at reams of text for hours on end.

Demon does give you a TCP/IP link; the other services mentioned in this article (CIX, Compuserve and Delphi do not). On the other hand, Demon is not the easiest service to use or configure, while with Delphi, for example, it's easy to get up and running, even though the interface is entirely text-based.

The fact that no-one manages the Internet as such, although the networks that make up the Internet are managed, means that there isn't really a hard and fast set of rules for how to go about using the system. But there are guidelines. Lots of them, in fact.

It is supervised by its own users, to the extent that there is something perhaps best described as an Internet dialect (see learning the language, below). Seasoned Internetters (Internauts) pride themselves on being helpful to new users, but *not* if you ask what they consider to be stupid questions. It also means that there is a general tone to online interchanges which veers from the American idea of freedom of speech to the equally American idea of political correctness.

Once you have made it into the Internet, you will probably find a steep learning curve awaits, in terms of finding your way around the system, and making some tentative steps towards taking part. The suggestions we've made here — browse through a few messages, join a special interest group, download a little software — don't even scratch the surface of what's available. The Internet is vast and complex, and if you're a serious user of its information services, you could well argue that posting a deconstruction of her latest album into the alt.music.kylie.minogue newsgroup is something of a trivialisation of the purpose of the Internet. But it's much more fun.

It's a terrible cliché, but the more you put into the Internet, the more you'll get out of it. Certainly the potential of millions of computers linked together and exchanging information in real time is exciting, even revolutionary, particularly when you consider the lack of regulation involved.

Some interesting things to do on the Internet

• *Download files*

You'll find programs, pictures, sound samples, video files all available for downloading from FTP (file transfer protocol) sites (an FTP site is, tautologically enough, a place where you can access files for downloading), just as there are on your local or favoured bulletin boards.

Wired magazine offers a Quicktime video which is quite funky, if short.

• *Browse the Usenet newsgroups*

This is where the pub analogy at the start of these pages is most relevant. For the Internet novice, 'lurking' (see Glossary) in and around the Usenet groups is an excellent introduction to the type of people you come across in cyberspace. A cornucopia of information, as well as a forum for users to let off steam and rant about their bête noires. Usenet groups are defined by the formula type.category.specific_topic, and cover every subject from computing to pop music to archaeology to domestic cats. Thus, newsgroups beginning alt. are 'alternative' groups, rec. stands for recreational, comp. for 'computer', for example.

One perhaps surprising aspect of Usenet is the high level of participation from people in the UK — and rec.sport.soccer is one of the most often posted newsgroups of them all.

If you want to marvel at the variety of human experience, browse through the alt. (alternative) groups, such as alt.aquaria.killies (type of fish),

GLOSSARY OF INTERNET TERMS

As with all computing subjects, the Internet has a bewildering amount of jargon, most of which you simply needn't worry about in order to get started. Some of the most common terms appear below.

Cyberspace
A general term for 'out there', online.

Emoticon
A symbol made up of keyboard characters, designed to convey emotion, facial expression, etc. A selection appears below.

FAQ
Frequently asked questions. Most Internet areas have lists of frequently asked questions and woe betide you if you start asking other users something which appears in the FAQ list.

Flame
To send abusive mail to someone over the Internet.

Ftp
Stands for file transfer protocol. Specifically, the means by which you download files from a service to your computer. An ftp site is an area on a service where files are available for downloading.

Gateway
The means by which two online services are linked together.

Gopher
An Internet tool which provides a means to access Internet areas through menus which appear on your screen.

JANET
Joint Academic Network, set up in UK universities from the early 80s.

Lurking
To browse Usenet groups and read messages without sending any yourself.

Mosaic
A World Wide Web (see below) browser available for Windows, and thus easier to use than some of the command line interface programs.

Netiquette
Internet manners: good practice for getting on with fellow Internet users — and to avoid being flamed (see above).

Netsurfing
Browsing through online information ser

These pictures from the film Speed were downloaded from the 20th Century Fox area on Delphi. While there is a vast number of pictures available from scores of different sources, you need to be careful about what you do with them: most, like these, are subject to copyright. Some posted pictures are almost certainly already violating copyright by being there in the first place.

alt.christnet.theology, alt.tv.brady.bunch, and of course, an astonishing assortment of discussions about sex.

• *Send someone some e-mail*

You can mail anyone anywhere in the world, so long as they have a valid e-mail address. An e-mail address will consist of the following elements:

online_name@BBS_or_service.type.country

with each element separated by a full stop. For example, PC Review's e-mail address is

pcreview@cix.compulink.co.uk

'pcreview' is the name of our online account, at (@) CIX, which is part of Compulink, a commercial (co) service in the UK (uk). You can read all e-mail addresses like this. If the address ends in '.us', the account is in the United States. Similarly, .ca is in Canada, .au Australia, .nl in the Netherlands, and so on. Instead of .co for commercial, you may find .go for government, .ed for education, and similar.

• *Access information/research*

The Internet isn't all about techno-nerds arguing about obscure programming terms. Remember, it began as a means for government and universities to maintain communication lines. You can track down files and data available to Internet users from universities and research facilities, and if you can't find exactly what you're looking for, you can always join a newsgroup and ask.

Your gateway to the Internet

(Phone numbers refer to the voice number to call for information, not the modem dial up number)

CIX
(081) 390 8446

Conferencing and e-mail service (which includes PC Review among its members). Once you have an account, log on and type 'go newsnet' for the newsgroup service, or 'go internet'. CIX is great for mailing and the conferences, but its Internet links are limited at the moment.

Compuserve
(0800) 289378

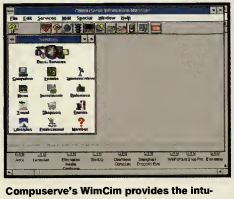
Very large US-based conferencing and e-mail service, with a UK division. Compuserve's WinCim graphic interface is easy to use and attractively designed, but it doesn't yet give full Internet access (though you can now use the newsgroups).

Delphi UK
(071) 757 7080

Newly launched UK offshoot of US-based information and e-mail service, with easy-to-use, though not pretty, Internet access. Once you have an account, log on, type @D and follow the text menus. A graphic-based, icon-driven interface is in development.

Demon Internet Services
(081) 349 0063

UK-based mail and information service, set up to provide full Internet support. Once you have an account, log on and download the configuration software. Once this is installed, you'll have text menu access to the Internet. And we strongly recommend you print out the manual and keep it handy. It's not the most intuitive set of utilities in the world.



Compuserve's WimCim provides the intuitive sort of interface that Windows users have come to expect.

vices, particularly if you're moving from one service to another through gateways.

Snail mail
Sarky term used by e-mailers for the conventional postal system.

TCP/IP
Stands for Transmission Control Protocol/Internet Protocol. This is the networking standard (the protocols required) used by most internet-connected sites.

Usenet
A large collection of general and special interest newsgroups accessible on the internet. Everything from rec.pets.cats (chat away about your moggy) to bionet.metabolic-reg (discussion about kinetics and thermodynamics) to alt.sex.bondage.

World Wide Web
A browser service for the internet which works on a hypertext basis. You pick out highlighted words from text on-screen to access more on those words.

Learning the language

Some Internet shorthand terms may be baffling when you first come across them:
ATM: at the moment
BTW: by the way
FYI: for your information
IMHO (or IMO): in my (humble) opinion
OTOH: on the other hand
RTFM: read the flaming manual (substitute the F-word of your choice here)
***word between asterisks*: denotes emphasis, as with italics in print**
MESSAGE WRITTEN IN CAPITAL LETTERS: denotes a great deal of emphasis

Because you can't hear people's vocal inflections when reading their messages, a set of 'emoticons', or 'smileys' has developed which consist of bunches of keyboard characters that are designed to convey the user's meaning behind the words themselves.

This is a very incomplete list of common smileys. Turn the page sideways (clockwise) to see how the smiley works.

:-)	**the original smiley, means I'm joking, or being sarcastic;**
;-)	**winking smiley: user didn't mean the last remark literally;**
:-(	**user is upset or annoyed;**
:->	**user is being very sarcastic;**
>:->	**user is being devilish;**
:-|	**user feels quite neutral about it;**
8-)	**user is wearing glasses;**
B-)	**user wears horn-rimmed glasses;**
:-~)	**user has a cold;**
:-*)	**user is drunk;**
#-(	**user has a hangover;**
:-&	**user is tongue-tied;**
:-x	**user's lips are sealed.**

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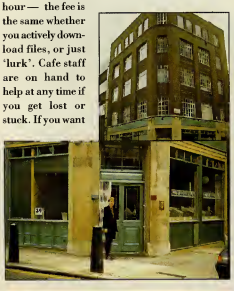
Cyberia
39 Whitfield St, London W1P 1LU
(071) 209 0982

Cafe-cum-coffee bar with a set of five Carrera 486-based PCs using Windows-based Easynet to hook up to the Internet. Cyberia opened its doors in September to a media deluge — at one point there were camera crews filming the camera crews.

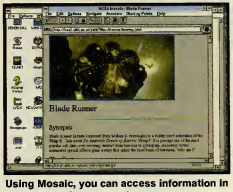
The cafe side of things is spartan — bare tables, wire-frame chairs — and the PCs are not on the tables themselves, but set at a counter the length of one wall.

Once you've been allotted a workstation, you can browse, download or upload for £1.95 per hour — the fee is the same whether you actively download files, or just 'lurk'. Cafe staff are on hand to help at any time if you get lost or stuck. If you want to take files away with you, you'll be asked to buy a floppy disk from the cafe. You can't use your own disks for virus-protection reasons.



There are other concerns also trying to set up 'cybercafes' in the UK, but so far this is the only permanent site outside San Francisco (as far as we know!). If you live near London and don't have access to a modem, this would be a good way to find out more and try out the Internet in a quiet and undaunting atmosphere.

Cyberia is open from 11.00am-6.00pm Monday to Saturday, and until 9.00pm on Tuesdays at the moment. Times may change in the future, but it's well worth a visit.



Using Mosaic, you can access information in a format that's easy on the eye.

HOW TO CONTACT PC REVIEW ONLINE

PC Review has its own electronic mail account with CIX. You can contact us on

pcreview@cix.compulink.co.uk

By sending your messages from your own bulletin board to the full PC Review address it should reach us through various gateways and you should be notified by your sysop if the mail doesn't get through.

Note: we do welcome your views via e-mail, and we will attempt to reply to your comments and queries, but there are only so many hours in the day, and you can help us cope with the weight of mail we receive. The following is a set of guidelines for contacting us:

1) Please don't necessarily expect a reply if your mail goes something like "Hi guys, how are you doing? I'm just trying out my new modem". We're doing fine, thank you.

2) Subscription queries need to include your snail mail address as well.

3) Please don't ask for game tips; wherever possible, try the publisher of the game instead. Some publishers (see separate panel) have their own e-mail addresses and bulletin boards.

4) We treat e-mail like all other letters we receive, ie, we assume mail is to be considered for publication in the magazine, unless you specifically state otherwise. We will also publish your e-mail address, again, unless you ask us not to.

Further reading

We have deliberately steered clear of a lot of Internet jargon and heavy detail in this article, but if you would like to know more about the Internet and how to use it properly, there are new books on the subject published almost every week. Ed Krol's The Whole Internet User's Guide and Catalog (ISBN 1-56592-063-5) is something of a 'standard' work, but the others listed also cover the subject in depth and attempt to be comprehensible to new users. See PC Review, Issue 35, for detailed reviews on these books.

Success with Internet, ISBN 1-884133-01-0, £24.99 by Allen L Wyatt.
Riding the Internet Highway, Deluxe Edition, ISBN 1-56205-315-9, £23.49 by Sharon Fisher, Steven Vaughan-Nichols and Rob Tidrow.
How the Internet Works, ISBN 1-56276-192-7, £22.99 by Joshua Eddings.
How to Use the Internet, ISBN 1-56276-222-2, £16.49 by Mark Butler.
Using the Internet, Special Edition, ISBN 1-56529-353-3, £37.60 by William A Tolhurst, Mary Ann Pike and Keith A Blanton.

And if you want to keep right up to date with the latest jargon and Internet culture, the monthly magazine Wired is a surprisingly readable guide to Californian computer-chic. Although produced in San Francisco, it's available from many larger newsagents in the UK.

Bulletin board numbers

You don't have to be on the Internet to get chatting, mailing or downloading. There are hundreds of bulletin boards in the UK alone, some small and run by enthusiasts, some large and professional. A number of software houses also have their own BBSs for games news, hints and tips. So if the Internet sounds too daunting, dial up a local BBS today and start surfing!

The 021 Connection	(021) 520 7615
Abacus	(0483) 755099
After Hours	(0785) 228214
The Farm	(0223) 208094
Fonix	(0344) 306986/306991
Flame-Out flight simulation BBS	(081) 773 8262
Hot Sound and Vision	(0932) 252323
Online BBS	(0839) 661199

Software houses online

Empire Interactive	(081) 343 7557
Gremlin Interactive	(0742) 767887
MicroProse	(0454) 329506
Microsoft	(0734) 270060/270065
Millennium	(0223) 845329
Mindscape	(0444) 872213
Psygnosis	(051) 708 5532
Renegade	(071) 702 3717
Sensible Software	(0799) 516097
Sierra	(0734) 304227
Virgin Interactive	(081) 964 4633
Westpoint Creative (Sound Blaster support)	(0743) 360287

PC Review has tried out pretty well all these boards, but a listing here does not imply a recommendation or endorsement. It's also — obviously — only a very small number of the bulletin boards operational in the UK. If you're interested in discovering more, Fonix holds a complete list which is regularly updated in .zip file format, which you can download to your PC to look up local boards near you. The latest version we saw was called Rluk9409.zip, but there will probably be a Rluk9410.zip by the time you read this.

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BETHESDA SOFTWORKS

WIN!

COMPETITION

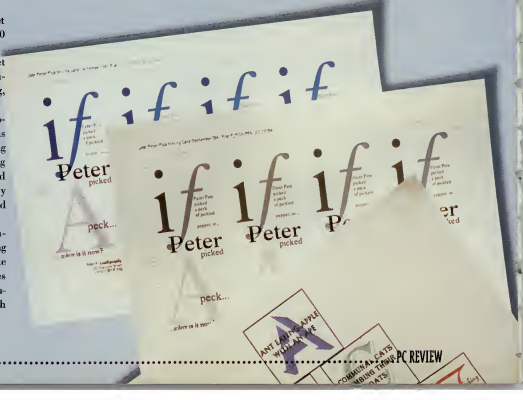
Three Canon BJC4000 state of the art colour inkjet printers up for grabs!

Three lucky winners of this month's big competition get to carry away a brand spanking new Canon BJ4000 inkjet printer.

The BJC4000 is the newest addition to the Canon BubbleJet range, and comes with all of the features you find in the company's popular BJ200 portable: high resolution, crisp printing, compact styling, lightweight and easy to set up.

But with the BJ4000, you now have the option to print in glorious full-colour on perfectly normal paper — which means no need for any fancy or expensive stuff — simply by selecting the colour cartridge. What's more, Canon has been working on new technology to produce inks that don't smudge, and automatic controls to get round the problem of the nasty 'banding' effect common with many inkjets, and you'll find all this in the BJ4000.

With the added bonus of colour printing as well as conventional black and white printing, the BJ4000 has got everything you might need at home or at work: four page per minute printing in black and white mode, and a respectable two pages per minute in colour mode. And, that's all at 360dpi resolution and using the the built-in automatic sheet feeder which happily copes with up to 100 pages a time.



COMPETITION RULES

- Employees of EMAP, Canon, their families and associates are not eligible to enter this competition.
- No multiple entries, please.
- No cash equivalent to the prizes is available.
- No entries received after the closing date will be accepted.
- The editor's decision is final.

Remember, if you want to enter more than one competition in each edition of PC Review, you can put your entries in one single envelope. If you do this, please mark clearly on the front of the envelope which competitions you have entered.

HOW TO ENTER

If you want the chance to win one of these superb prizes, there are only three simple things you have to do. First, answer the three following questions (correctly!). Second, complete the tie-breaker in a thoroughly original way . . . . . And finally, put your answers on the coupon below (or use a photocopy if you don't want to spoil your magazine) and send it to the following address:

Canon competition
PC Review
Priory Court
30-32 Farringdon Lane
London EC1R 3AU

And now, the all-important questions ...

1 A BJC4000 is ...?
a) A large earth-moving machine
b) A furry quadruped
c) An inkjet printer

2 Inkjet printing works by?
a) Forcing ink at high pressure through thousands of tiny nozzles
b) Luck
c) Brushing ink across letter shapes cut into microscopically small potato slices.

3 Canon is ...?
a) A big gun
b) A fat detective
c) Manufacturer of the world's best printers!

Now complete the all-important tiebreaker in less than 12 words: "There's nothing better than a BubbleJet because . . ."

Your entry must arrive at Emap Towers' (hub of the universe, etc, etc) throbbingly busy offices by November 15, 1994. This is the closing date for the competition, and no entries arriving after this day will be accepted. You have been warned.

Please note: minimum hardware requirements for the competition prizes are as follows: a 25MHz 386 PC, with 2Mb of RAM and an RS232 serial or centronics parallel port. Windows 3.1 recommended.

Canon competition

Name .....

Address .....

.....

.....

Answers:

1. .....
2. .....
3. .....

Tie breaker

There's nothing better than a BubbleJet because .....

.....

.....

(complete this sentence in not more than 12 words in a way that you feel is witty or appropriate to the subject)

❒ Data protection: tick this box if you do not wish to receive further information or other offers or services in the future.

❒ I am under 18
❒ I am 18 or over

Closing date: 15 November 1994

PC Review Issue 37 November 1994

KA-50 HOKUM

A HELICOPTER FLIGHT SIMULATION OVER THE SOUTH CHINA SEAS

SCALE 1:72 | FORMATS: IBM PC AND COMPATIBLES | FIRST CLASS PILOT WANTED-APPLY WITHIN | VIE-94

EVERY DAY IN THE SOUTH CHINA SEA UP TO 200 SHIPS SLOW TO AS LITTLE AS 15 KNOTS TO PASS THROUGH SEA-LANES LESS THAN A MILE WIDE ... LEAVING THEM OPEN TO ATTACK FROM PIRATES. VALUABLE CARGO IS CONSTANTLY STOLEN. SOMETIMES LIVES AND WHOLE SHIPS ARE TAKEN. UNDERSTANDABLY, NOT EVERYONE IS HAPPY ABOUT THE SITUATION. SOME CORPORATIONS ARE PREPARED TO SPEND VAST SUMS OF MONEY EMPLOYING PEOPLE TO PROTECT THEIR INVESTMENT.

PEOPLE LIKE YOU. FROM SIMIS, THE TEAM BEHIND THE CRITICALLY ACCLAIMED AV-8B HARRIER ASSAULT, COMES A SIMULATION OF PHENOMENAL PROPORTIONS. FLY FOUR OF THE WORLD'S MOST ADVANCED HELICOPTERS ...

* THE KAMOV WEREWOLF KA-50 HOKUM * THE KAMOV HIP HI-8 * THE BELL SUPER COBRA AH-1W * THE WESTLAND ARMY LYNX

... EACH ONE SIMULATED TO AN UNPRECEDENTED DEGREE OF REALISM WITH SOLID TEXTURE-MAPPED DETAIL AND AUTHENTIC FLIGHT MODELS TESTED AND APPROVED BY EXPERIENCED PILOTS. TAKE ADVANTAGE OF THE UNIQUE TWO-PLAYER CO-PILOT FEATURE, AND THE MOST ADVANCED STRATEGIC BATTLE-PLANNING SYSTEM EVER IMPLEMENTED IN A COMBAT SIMULATION. SPECTACULAR CAMERA VIEWS BRING TO LIFE THE FULL EXPLOSIVE IMPACT OF COMBAT IN THE AIR AND OVER GOURAUD-SHADED TERRAIN. BUT DO YOU HAVE THE NERVE AND ABILITY TO COMMAND A FOOD-STICKING FLEET AND WAGE WAR AGAINST THE PIRATE ARMIES?

KA-50

Virgin

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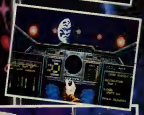

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Empire building

With the advent of games such as SimCity 2000, Civilization, Colonization and Theme Park the strategy game has now come out of the closet and into the main games arena. Our resident empire-building expert, Simon Shaw guides you through the best in strategy games.

Strategy games have traditionally been among the poor relations of the PC leisure market. When, recently, I tentatively asked a top designer if his company had any plans to produce a strategy game his response was to wrinkle his nose up as if at a bad smell. "Boring!" he offered emphatically before returning to the demo of his flight sim and making a few more things explode. I would quietly beg to differ.

By any objective standard this has been a great year for strategy fans. The big success story so far has been SimCity 2000, and I'm hard put to think of any game which has ever enjoyed such unanimous popular and critical acclaim. After Syndicate, Bullfrog would have been forgiven if it had let its standards slip just a little, but it has come up trumps again with Theme Park. And now we have Colonization, Sid Meier's long-awaited sequel to Civilization. These three alone, I suspect, will make it on to many people's personal top tens come the end of the year.

And there's more to come: after SimCity, watch out for SimTower. After Colonization, get ready for Civilization II (though don't hold your breath).

Of course this is a sequel-intensive industry, but there's still plenty of scope for original design. One of the most exciting new titles I've seen in this or any year is MPS's forthcoming Transport Tycoon (previewed last issue). It looks like a cross between A-Train and Railroad Tycoon, and although I haven't seen the finished version yet, I've seen enough to be mightily impressed. It's certainly been enough to set me thinking on the question of what does or does not make a good strategy game. So here, in no particular order, are some of the thoughts that flashed through my mind while drawing up the list of the Top Twelve strategy games (it was meant to be a Top Ten, but there were just too many goodies I couldn't leave out . . .).

Beginning with graphics . . .

The whole area of graphics gives designers more scope for bad excuses than anything else. How often, especially since the CD-ROM explosion, have we seen the most dreadful rubbish justified with declarations along the lines of, "Well, the graphics are great, aren't they?" With strategy games this won't wash. That's not to say they're completely unimportant (would anyone want to go back to SimCity after SimCity 2000?), it's just that even the most sumptuous appearance cannot distract from poor gameplay.

On to depth of play . . .

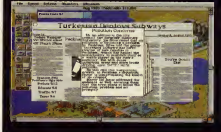
There's nothing more disappointing than cracking a game within a few days, and longevity is one of the key strategy benchmarks. However, striking a balance between depth and playability is equally important. Take Railroad Tycoon. A friend who'd played it to death and become bored suggested to me that there'd be more mileage if you could set the ticket prices for train journeys yourself. On the contrary, it would be a complete disaster, because the game would be instantly overburdened with detail. Look at Impressions' AirBucks, which tries to do precisely that and fails for the same reason. Part of the secret of Sid Meier's success is that he knows when to leave the boring stuff to the computer and so never lets you get bogged down in needless and repetitive routines.

Artificial intelligence and networks

Even the best artificial intelligences are fallible, but at the least they should give you a thorough mental work-out. One of the best features of the genre is the scope it gives you for devising perfect strategies, but when you've finally cracked the AI, what then? I've always fondly assumed that the next step must be increased networking, but I'm now having to revise that opinion. US Gold's Kingmaker was issued with a reply-paid envelope inviting purchasers to send in

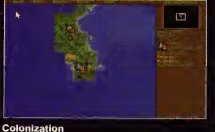
THE TOP TWELVE

What is a strategy game? My criteria here have been fairly loose. In our war game round-up (Issue 22), I excluded Dune II on the grounds that it was sci-fi, so I've included it this time, although I'm aware that it could be described more as real-time action than as a strategy game.



SimCity 2000
Maxis
One of those rare games in any genre where you don't have to, a) kill anybody, b) destroy or blow anything up, or, c) grind your rivals into the dirt. It sounds boring, but is actually one of the most rewarding experiences available on the PC. And despite all that I've said about irrelevant graphics, it's great that it looks terrific, too.

Civilization
MicroProse
Because Civilization came up way back in issue one of PC Review it received an artifically low mark (nothing got higher than a seven). However, it's probably been mentioned more times as an Alternatively . . . than any other game, so we've probably made up for it. This game really has stood the test of time, just like it says on the box.



Colonization
MicroProse
Sid Meier's brand-new follow-up to Civilization focuses on the discovery of the New World and the period 1500-1800. It's different but the same, like travelling a well-worn path and suddenly finding some unexpected new turnings. There's nothing radically new, but who cares? It's full of subtle and ingenious ideas, and I love it.

THE TOP TWELVE (cont)

Railroad Tycoon
MicroProse
Still on the theme of Sid, and the oldest game on the list, RRT deserves that much-abused 'classic' tag. This and the original SimCity really turned me into a PC strategy addict, so it's got a lot to answer for. The graphics look like something from the Dark Ages, but I recommend the original over the pointless recent Deluxe update.

The Settlers
Bluebyte
Lemmings play Civilization in this popular recent release. Like Theme Park, it's perhaps a little on the cutesy side, but all the little munchkin people are just this side of endearing, and this is a fine and absorbing empire-building game. The usual ingredients of resource management and imperial violence, and massively detailed to boot.

A-Train
Maxis
Your job is to lay the railroad tracks in the right sort of places to encourage the local communities to grow, SimCity-style. Interestingly enough, the more you play A-Train, the more SimCity-ish it gets and the less it has to do with railway-building. It's getting very old now, but I still find I keep coming back to it.

Master of Orion
MicroProse
One of the better Civilization clones, the challenge is to build an empire in space and achieve galactic domination. If you've cracked Civilization this isn't going to tax you, but it's enjoyable and boasts some original touches. Look out for Master of Magic, (reviewed in this issue on page 60), is a fantasy variation from the same team.

Dune 2
Westwood Studios/Virgin
A real-time game in which you have to mine spice on the planet Arrakis and conquer the evil Harkonnen. Nothing like the book, and nothing like the original Dune game either. As it's played in real-time your reactions get tested as much as your wits, but it's still clearly a strategy game, let down only by the limited scenarios.

Kingmaker
US Gold
This version of the famous Wars of the Roses board game is a tough challenge. What really makes it difficult to win is the initial random 'deal'. If your only decent nobleman is Stanley and you're stuck on the Isle of Man without a ship, you're stuffed. To get the most out of it, play against the maximum number of opponents.

Theme Park
Bullfrog/Electronic Arts
Strategy games needn't be restricted to worthy topics such as railways. Theme Park is a wonderfully lighthearted game requiring some serious strategic play. Your aim is to develop your greenfield site into a extravaganza of rides, sideshows, shops and facilities. Watching the park come to life is highly satisfying, as well as great fun.

Syndicate
Bullfrog/Electronic Arts
You control a team of cyber-agents which you send off to assassinate people in a futuristic cityscape. Ruthlessly cynical and great fun. And the strategy element? Well, there's the planning of the missions, but I won't argue the point. Objectively, Populous 2 should be here instead, but it's my list and I'm having Syndicate.

Transport Tycoon
MicroProse
It's not released yet, so strictly speaking this is a cheat, but MicroProse's imminent empire builder game shows every indication of being a classic, despite its huge and obvious debt to Railroad Tycoon. And it's British-designed too. Hurrah! The only sadness is that the built-in network option isn't likely to get the wide use it deserves.

for a *FREE* network disk. They received 40 replies. The future of networked games in this country still looks difficult due to high telephone charges, which means the mouthwatering multi-player options on games like Transport Tycoon and Colonization are doomed to be played by the few. There'll always be a few hardy souls prepared to lug their machines about physically and connect them via null modem, but, as Bob Malim of US Gold says with respect to Kingmaker, "Then why not play the board game?"

Linearity and non-linearity

Linearity is one of those buzzwords that set my teeth on edge. It's meant to be bad, while non-linearity, meaning that you don't have to approach tasks in a rigid order, is meant to be good. Now this may hold true with adventure games, but it doesn't stand up to strategic analysis. Sierra's Outpost has been touted as a non-linear game, the implication being that you can build up your space colony in a number of different ways. But if you construct it in the wrong order the whole thing will fall apart. Even with SimCity 2000, that paradigm of elasticity, there are clear constraints on your behaviour you may think you're free to set as high a tax rate as you like, but if you overstep the mark no one will want to live in your city. Talk of linearity is irrelevant. The best strategy games are tightly structured. If you want a "Go anywhere/Do anything experience!" buy a one-day travelcard and spend it on the London Underground.

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Little Big Adventure

Is Little Big Adventure the next big thing? Cal Jones speaks to Adeline's Frédérick Raynal.

Little Big Adventure is exactly what it says it is: it features lots of little people, it's very, very big (with 40 different locations, 50 buildings, ten islands, mountain ranges and even an ocean to explore, who's going to argue?), and, er, it's an adventure.

"An adventure?" I hear you say, "what's so remarkable about that?" Well, for starters, it has 3D isometric, ray-traced, Gouraud-shaded, SVGA graphics. In other words, it looks very, very nice indeed. "Ah," you say again, "but graphics alone do not a great game maketh." OK, you may have a point there. Since the advent of CD-ROM, games companies everywhere have been falling over themselves to fill up these shiny marvels with the most amazing visuals they can render. And the results aren't always a lot of fun to play, are they? But don't panic, Little Big Adventure (or LBA) is as playable as it is pleasing to the eye.

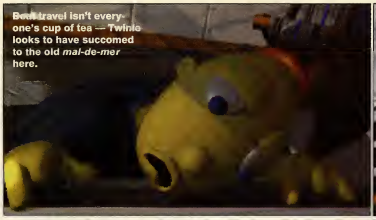
Back to the future

The game takes place in the distant future, in a world where humans have managed to kill themselves off and three other intelligent races have evolved to take their place. These races, the grobos (a sort of cute humanoid elephant), the rabibunnies (a sort of cute humanoid rabbit) and the quetches (as near as you can get to human without being human), have all been living together in peace and harmony. Unfortunately the rather nasty Dr Funfrock has seized power, set up a police state and banished all the inhabitants to the southern hemisphere so he can perpetrate acts of great evil.

Naturally, someone has to stop him, and that someone is a quetch bearing the unlikely name of Twinsen. Now Twinsen isn't just any old quetch — he believes that a deity, Sendell, has visited him in dreams and asked him to thwart Dr Funfrock's wicked plans. Rather than thinking "I better lay off the cheese before go to bed," as you or I might, this male equivalent of Joan of Arc promptly went out and spouted off about the Legend of Sendell to the locals. Consequently, and not surprisingly, the not so friendly local constabulary have thrown him and his girlfriend, Zoe, in jail.

At the start of the game, Twinsen has managed to escape, so not only must he defeat the nasty Funfrock but he also has to rescue his fair lady. Not easy, of course, but then these things never are, are they? Taking charge of Twinsen, you have to solve puzzles, explore, drive different vehicles, talk to characters and duff up the baddies. Whilst none of these activities will seem out of place in an adventure, LBA has one unique feature, which is that you can alter Twinsen's mode of behaviour to suit the occasion. There are four modes of behaviour: normal, which serves you through much of the game; aggressive, which is ideal if you get involved in a punch-up; athletic, for leaping around and running away, and furtive, when you need to sneak around somewhere where you really oughtn't to be. Needless to say, choosing the right mode is crucial to solving the game.

LBA is the first game from Adeline Software, based in Lyon. Adeline, a subsidiary of Delphine,



Bear travel isn't everyone's cup of tea — Twinlo looks to have succomed to the old *mal-de-mer* here.

was formed as recently as February 1993, with several of the company's key members having defected from that other French software house, Infogrames. The team is headed by programmer Frédérick Raynal, who along with graphic artist Yael Barroz , animator Didier Chanfray and coder Serge Plagnol, worked on that old classic, Alone in the Dark.

Early influences

Although the look of LBA is somewhat different from Alone, Alone's influence can clearly be seen in the way the characters move. Even so, the 3D routines have been written from scratch to allow for LBA's isometric viewpoint. When Frédérick was younger he enjoyed playing isometric games such as Knightlore, and so it was his ambition to create a modern version — LBA is the result.

In addition to Alone and Knightlore, LBA has been strongly influenced by a game called Zelda which appeared on the SNES. Although Zelda was aimed mainly at children, it proved popular with older players as well. Recognising this, Frédérick decided to create a game which had Zelda's cute appeal but also incorporated plenty of action too.

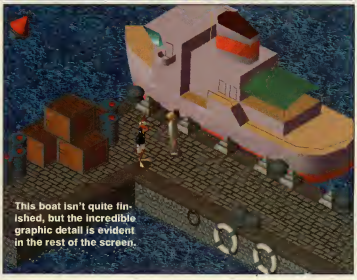
And gameplay, of course, is incredibly important. As someone who enjoys games for their entertainment value rather than their visual appeal, I have been dismayed by the trend towards fantastic looking "interactive movies" which really aren't that interactive at all. Adeline, thankfully, is not guilty of the "let's design some nice graphics and then fit a story around them" syndrome.

When Adeline was formed, the company consisted of only four people (the team now numbers 13), one table and no computers at all. Consequently, LBA was initially designed on paper, and most of the ideas for the story and gameplay were set out long before work began on the computer.

"Alone in the Dark's influence can be seen in the way the character's move."

Frédérick Raynal has been in computers long enough to know what makes a game good. He became interested in electronics at the tender age of 12 and then began actual programming, on the ZX-80, two years later.

Although he spent several years playing around with Excel 100s, Spectrums and all manner of other ancient computers, his first PC game (written together with Christopher Aze) was Popcorn, an Arkanoid derivative released as shareware a couple of years back. After completing a year's national service, Frédérick moved to Infogrames . . . the rest, as they say, is history.



This boat isn't quite finished, but the incredible graphic detail is evident in the rest of the screen.

And what of the future? Frédérick admits that there will almost certainly be a sequel to LBA, but he also mentions an action game that can best be described as an isometric version of Doom. Well, whatever happens, I'm very much looking forward to November, the date LBA is due to be released. I have a strong hunch that the Little Big Adventure is going to be absolutely enormous.

■ **Cal Jones**

Above: Be careful who you talk to — some characters aren't quite as friendly as this rabibunny.
Left: The isometric view adds a whole new dimension to puzzles.

FACTBOX

LITTLE BIG ADVENTURE

Developer:	Adeline Software
Publisher:	Electronic Arts
Release date:	November
Genre:	Adventure
Minimum PC:	£TBA

Multimedia: the way forward?

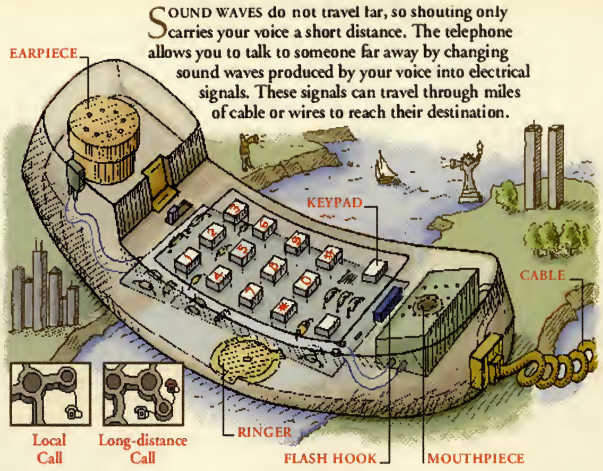
After publishing Steve Cooke's polemic in Issue 34 on the generally poor quality of so-called 'multimedia' programs being released on CD-ROM, we thought it only fair to draw your attention to a new range of CD-ROM reference programs which show exactly what multimedia should be all about. Christina Erskine talks to Dorling Kindersley about its remarkable range of five titles released this autumn.

In his critique of the generally dire nature of CD releases these days (PC Review, Issue 34), Steve Cooke said, "there has not yet been a single (CD-ROM title) which I would pay for that could not have appeared on floppy disk". He also said, "I think that 99 per cent of these products suck". Well, I think I've found the one per cent that don't. Like the cavalry coming over the hill, book publisher Dorling Kindersley has arrived on the CD-ROM scene to rescue the reputation of reference CD-ROMs from the mire.

Dorling Kindersley is well-known as the publisher of lovingly-crafted, beautifully illustrated reference books for children, adults, anyone, indeed with an inquiring mind. Over three years ago, it recognised that CD-ROM, then an embryonic format on which to publish *anything*, held possibilities for presenting material in a way that the printed page alone never could. It cut its multimedia teeth developing CD-ROM titles such as Musical Instruments and Dinosaurs for Microsoft (now a minority shareholder in the company), which consequently enabled it to set up its own in-house multimedia development division.

Musical Instruments is a product which, despite the rather esoteric subject matter, has been held up as a prime example of exactly what multimedia should be all about, while Dinosaurs was also well-received, possibly despite rather than because of the then fashionable subject matter.

However, it is a measure of just how seriously DK takes this new market that this team were able to spend this amount of time storyboarding, developing, commissioning, planning and programming



before the first products for Dorling Kindersley itself saw the light of day. Dorling Kindersley itself has invested heavily in its multimedia resources, although it's reluctant to release a precise figure.

First on the scene

The first five programs are all due out on PC CD-ROM this autumn. They cover a range typical of Dorling Kindersley's output, from a pictorial dictionary for children, to in-depth illustrated guides for older children and adults. And understandably, most are based on existing books.

"Generally, we plan to exploit what we are good at, and what we're good at is our reference books, so yes, obviously we will be producing titles based on books," says Andrew Goff, Dorling Kindersley's multimedia product manager.

One CD-ROM, David Macaulay's The Way Things Work, is based on a book which has sold nearly three million copies in two years and achieved cult status in the US.

"In the States, they see the mammoth from the program and immediately associate it with the book, so that meant it was a natural for converting to CD-ROM," says Goff.

Stowaway is also based on a book, but My First Dictionary is an original: "There is nothing really quite like this. It was quite a bold decision to go for, well, four-year-olds really, but we wanted a wide range of products."

That the range is wide is borne out by one of next year's releases, the Anne Hooper Ultimate Sex Guide, which is based on the book of the same name. This is very much a book for adults on technique, *not* a 'facts-of-life' book for younger readers. "But something like the Ultimate Human Body would be suitable for children — you could sit the kids down in front of that particular CD-ROM title and just let them explore. And P B Bear's Birthday Party, which is based on one of our books, is very much aimed at children."

The in-house multimedia team of Dorling Kindersley now numbers over 110 staff, with each title being worked on specifically by small teams of writers, designers, artists and animators. "Each team is headed up by an editor and a designer. The emphasis on design and the creative side is absolutely 'key'," explains Goff.

The screens for the programs are planned out in storyboard fashion, especially for the animated sequences. "We have in-house animators and that side of things is planned exactly as a TV clip or video would be — it's more than just publishing in the traditional sense.

"Because all the work is done in-house, we not only build up good team spirit, but the titles come out on time — which seems to be almost unheard of in this industry."

While the titles are all developed in the UK, Dorling Kindersley expects the majority of initial sales to be made in the US. "The UK multimedia market is growing hugely, but it's about a year behind the US. Still, it's developing rapidly, with Dixons, for example, getting heavily into it."

Breaking glass
A wineglass can be shattered by a sound wave if the wave matches the natural vibrations of the glass.

Selling through

Where to sell the multimedia titles (ie, where you can go to buy them) has proved something of a puzzle for Dorling Kindersley. While stores such as Dixons and PC World are up and running in terms of selling this kind of software, Dorling Kindersley itself has felt that its more traditional outlets — the Dillons, Waterstones and W H Smith territory — is equally suitable. These three named here are indeed stocking the Dorling Kindersley range on a trial basis.

Having invested heavily and with an evident long-term view of the multimedia reference market, does Dorling Kindersley see the CD-ROM taking over from the printed page?

"We don't see multimedia as a replacement for books, more as complementary. But reference titles can be better represented in multimedia terms rather than the two dimensionality of books, and so for reference it may well become the format of choice. Certainly the schools are already very keen to use it.

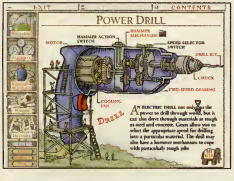
"Traditional text-based publishing will probably stay that way, but publications with pictures that lend themselves to being spiced up, will be spiced up even more with multimedia." ■

THE TITLES

Ultimate Human Body (£79.00)

A detailed tour through the human body organs, systems (digestive, nervous, hormonal, etc) and mechanics (such as how blood flows, muscles, work, and so on). This utilises diagrammatic illustrations for the main part, with still photographs, microscope enlarged images, and animations to explain how various functions work. There's an A-Z guide of all the parts mentioned if you just want to look up something quickly, and an extensive zoom feature which enables you to start off at, say, a picture of the whole human body and progressively zoom in until you have a microscope-enlarged shot showing details of the rods and cones in the eyes.

The whole thing is backed up with speech and sound effects, it's beautifully designed, and the attention to detail is astonishing. It's also a review in this month's product directory if you want to read a little more about it.



The Way Things Work (£79.00)

David Macaulay's book, upon which this title is based, has sold over two and a half million copies. Brought to life, these amazingly detailed drawings really do lift the veil on everyday inventions such as the telephone, television, the power drill ... you name it, everything from simple mechanical levers to complex machinery to electronic devices is covered in this program.

Not only do you see the animations, but there is also a spoken commentary to help you.

Again, there is a standard of care and thought in The Way Things Work that is way ahead of many 'multimedia' programs on the market. For instance, for each machine described, there is a 'see also' icon for related inventions. Machines can be accessed via an A-Z index, by type or by looking them up on the historical 'time-line' feature — so that you can see what preceded what.

There are even biographies of the inventors concerned. And not only that, but the title even has its own mascot, the woolly mammoth, which can be seen trying out the various inventions and features — often humorously, but never descending into cuteness.

My First Incredible Amazing Dictionary (£49.00)

My first reaction on seeing CD programs designed for very young children is usually "Run away! Run away!", but even at way over 21 I was entranced by this. It introduces children to around 1,000 key words, using animations, speech, music and sound effects to get the definition across.

There is active cross-referencing between words, and words can also be grouped on screen by type (the pets group, for example, contains various dogs, cats and mice).

There are also word games, such as Guess What?, pictured here, which make the whole thing fun as well as 'educational' (dread word!).

Stowaway (£49.00)

Stowaway is a singular demonstration of how graphics that were hugely impressive in one medium (Stephen Biesty's very detailed cross-sections on the printed page) can be lifted into a whole new dimension in another. This depicts the layout, daily round, the crew and the life on board an 18th century Man-of-War sailing ship. Now the cross-sections are solid, sliding out of the ship at the correct point, with a wealth of information on each slice of the ship, portrayed in speech, sound effects, text (as little as possible) and animations.

Stowaway is also reviewed in this month's product directory if you'd like to read more about this remarkable CD-ROM.

Eyewitness Encyclopedia of Science (£99.00)

And here is an equally impressive demonstration of how multimedia can and should be used to make difficult concepts easily comprehensible. The encyclopedia covers physics, chemistry, mathematics, and life sciences, using animations, Quicktime video sequences, annotated diagrams, speech and sound effects to explain a daunting range of scientific phenomena, from the life cycle of the solar system, to why concrete bridges are liable to collapse if soldiers march in step across them, to algebra, geometry, the principles of force and circular motion ... in fact, one of the most remarkable things about the encyclopedia is the sheer scope of the information covered.

It isn't a limited list of things, it really is one huge encyclopedia.

Next year's models

Dorling Kindersley plans to publish its CD-ROM releases in batches twice a year. With the first five, detailed above, in the shops now, the next five will be released in March 1995:

Dorling Kindersley World Reference Atlas

Eyewitness Encyclopedia of Nature

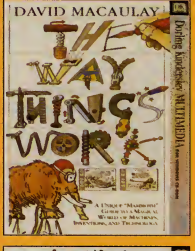
Eyewitness History of the World

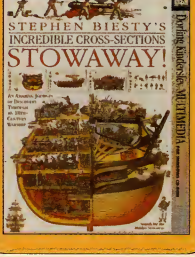
P B Bear's Birthday Party

Anne Hooper's Ultimate Sex Guide

On the bookshelf

Dorling Kindersley's first five titles range in price from £50 to £100 and are available from major bookshops as well as traditional computer software outlets.





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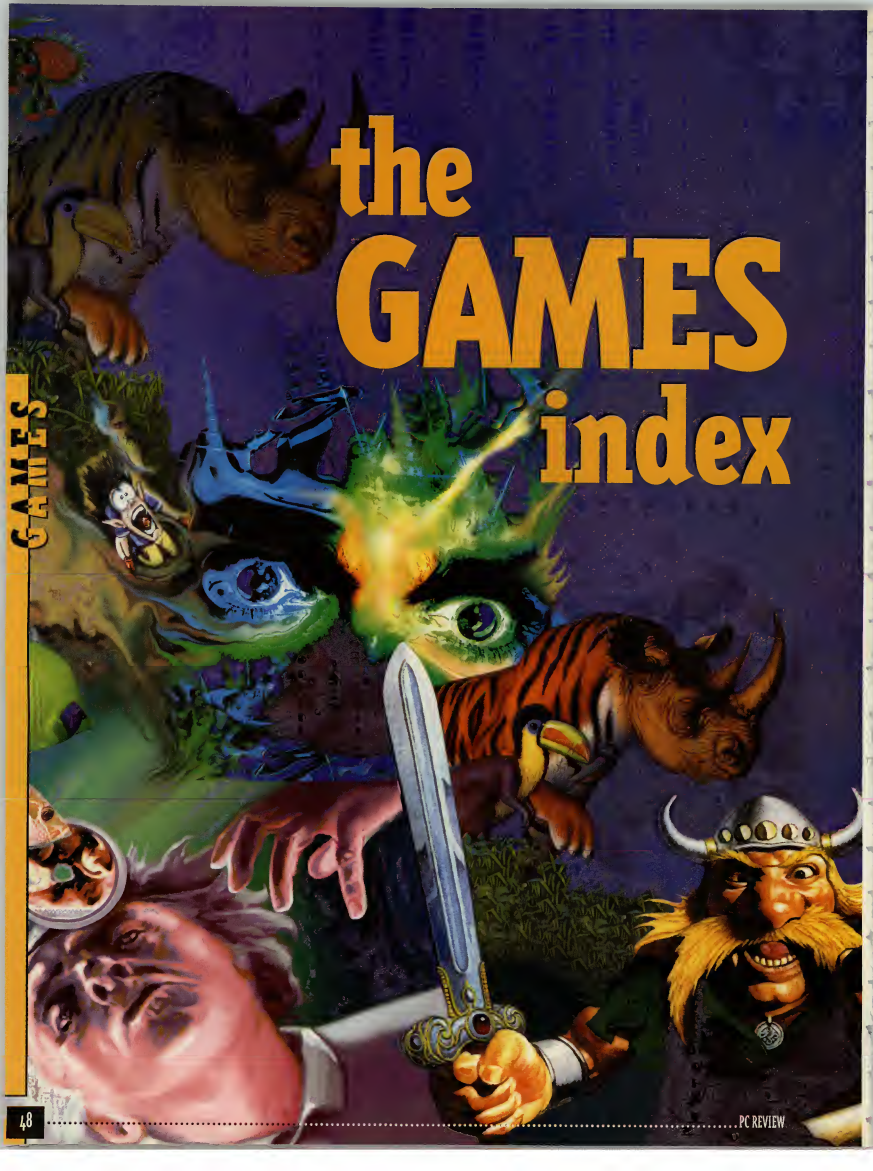
the GAMES index



Reviewed this month GAMES

Welcome to PC Review's games section, 50 pages of reviews, news, previews and tips covering absolutely everything that's happening in the world of PC games.

We know from our surveys and correspondence that you consider the reviews not only the most important part of the magazine, but also the best games reviews in the business. That's why we take the trouble to include additional information such as the Alternatively panels which are there to place the title being reviewed in context. We'll tell you about similar types of game which may be more – or less – to your taste. We also include playing guides to many of the games we reviewed, designed to give you a feel for what the game is really like.

The ratings

PC Review gives a single mark out of ten to rate games. We chose ten because it's succinct, simple and because there's little point in haggling over the odd percentage point between an arcade game and a war game which can't really be directly compared anyway.

We can be pretty tough on games when we put our minds to it – since 'five' is the average mark, any rating above five means the game is above average and vice versa.

0: A game without absolutely nothing to recommend it to anyone.

1-2: Poorly implemented game, badly programmed, very disappointing.

3-4: A game with some good ideas but serious drawbacks: poor controls, poor animation, maybe just plain tedious.

5: A solidly average game. Competent without being anything special, probably enjoyable in the short term.

6: Won't disappoint any fans of the genre; an above average title but probably one which doesn't break any new ground.

7: Good, imaginatively programmed game which should appeal to the majority of players.

8: Very good indeed — a game will need something special in the way of gameplay, innovation, graphics or sound to worth an eight.

9: Outstanding as an all-rounder. Few, if any, failings, in graphics, sound, atmosphere, playability, ease of use, etc.

10: Sheer perfection.

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DISK ONLY

Doom II: Hell on earth

Doomsday is with us once again. But can Doom II: Hell on Earth possibly top the incomparable original, or is it just a cash-in?

Forget SimCity 2000, Theme Park, TIE Fighter or Inferno. Forget every other big name game this year. Because there's one game that has had more impact than all of them put together and that's Id's 3D nightmare — Doom.

So, Doom II: Hell on Earth has to be the most eagerly awaited, best publicised sequel the PC has ever known.

Which hopefully means I don't have to explain the whole Doom thing all over again. Because surely there can't be a single person on this planet who hasn't heard of the game?

But just in case . . . Doom II is a 3D first person perspective action game with the atmosphere and shock effects of a splatter horror movie. It's all about survival and doing unto others with a chainsaw what you wouldn't like done to yourself.

Into the valley of death

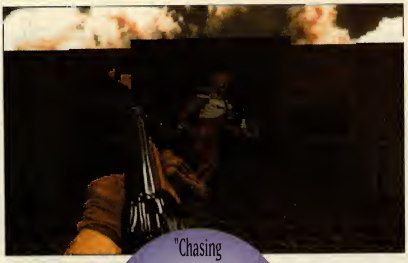
At the end of the first game, your trusty space marine had fought his way out of a demon-infested hell, back to the earth's surface after a suitable period of chainsaw-wielding mayhem.

In this sequel, however, the first thing you see on your return to your home planet (and the last thing you see before you quit the original game) is the oh-so-subtle rabbit's head on a spike. This tells you that, a) the bad guys had got there first and, it seems, they don't like rabbits, and, b) a sequel is on the way.

So in Doom II, true to form, you begin the game by coming out fighting.

The demons have taken over a nearby city and they're merrily carving up the inhabitants for a mid-morning snack.

First off, you get the job of driving them out and saving what's left of the city. That done, you find the demons have retired to their fortress outpost to sulk. In the true



spirit of human/demon understanding, you bust in and trash it, find the portal back to hell, and dive in to finish the job.

"Chasing friends (or enemies) round a dark room with a mini-gun appeals to our better nature."

Big guns? What big guns?

If that sounds to you more like an add-on to Doom rather than a whole new adventure, you wouldn't be far wrong. To be brutally honest, there's not a lot in Doom II that we haven't seen before. Some tweaks to the engine so it's a bit more stable and runs a bit smoother, one new weapon and a handful of new monsters thrown in to 30-odd new maps. What the hell is going on?

At least the weapon in question is a double-barrelled shotgun. It may not look a lot, but it's a beauty once you get used to it. Slower to reload than the ordinary shotgun, it packs enough punch to blast imps and soldiers back half-way across the room. This I like.

As for the new monsters, well . . . I suppose you can't complain, even if a couple of them are simply weedier, but more numerous, versions of their big brothers. The new mancubus and the archvile are particularly unpleasant. The revenants with their bendy fireballs are no picnic, either — a fireball up the backside when you think you're safely hidden behind a pillar is not a pleasant experience.

The new levels? Well, they're tough, complicated and packed with traps and switches. Good. There are some neat designs — I particularly like the suburbs scene and the castles in chapters 10 and 14. But there's nothing that really takes your breath away, I don't find them as atmospheric as the original, just more frantic.

Id seems to have decided that the way to extend the game is simply to throw in more switches and false walls/floors/doors and so on, and quadruple the number of bad guys coming your way.

Virgin keeps telling me that it's more strategic than the original Doom. But from what I've played, I can't see it, somehow.

True, you need to look before you leap in blasting more than you used to, but I've played Doom II from start to finish now and I can't honestly say that at any time did I do anything vaguely strategic. I killed things a lot, ran away a lot, and pushed a lot of buttons. Need I say more? On this score, Doom II is really no more than an expensive data disk. Something that's not that far removed from the sort of stuff you can find for free by trawling the bulletin boards and downloading an extra 30 levels.

Net-hacking

OK, so maybe the single player game is a bit disappointing, but at least some of the levels in this game have been designed with networked games in mind.

Ordinary Doom and network Doom are like two completely separate games. The multi-player facility has easily done more to clog up networks and sell serial cables than any game before. Chasing friends (or enemies) round a dark room with a mini-gun and a chainsaw obviously appeals to our better nature.

The rule changes which appeared in Doom 1.6 are selectable options in Doom II: respawning objects, no monsters, warp to levels, minus frags for taking a self-inflicted early bath and so on, they're all in there and a lot easier to set up.

Networking

But do you want to hear the best bit? In Doom II you can have up to eight players in a network game. Just thinking of the carnage makes me go wobbly in all those important little places.

I'm not going to argue with you. Multi-player Doom is the most fun you can have without being horizontal, a joyously frantic, madly manic bloodfest between consenting adults . . .

NEW FACES

Pain elementals: AKA one-eyed space hoppers, with the charming habit of projectile vomiting flaming skulls at you. Cheers.

Revenants: terminal anorexics who pack a real punch. Their homing fireballs seem to be able to bend round corners. Quite easy to kill.

Mancubus: fat things with very big guns, big arms and little diddly legs. Also make farting noises. Not pleasant . . .

ArchVile: tall lanky white things which reanimate monster corpses and generally run around a lot making big yellow flashes and causing a fair amount of damage.

Hell knights: just the same as the Barons of Hell, only easier to kill.

Arachnotron: and funnily enough, the same applies to this one.

Chaingun dude: fat men with big guns who explode rather nicely. Can cause untold harm with that mini-gun if you don't spot them quickly.

Above: What the hell are Wolfenstein levels doing in Doom 2? Very funny, I'm sure.

All you need is access to a big enough network and an understanding boss. Imagine lining up, four aside, in a small room: "ready, steady . . . chainsaw!" For splatter value, its the games equivalent of the entire Nightmare on Elm Street series.

Last rites

Now that I've played it through, I don't really know quite why I got so steamed up waiting for Doom II to land on my desk, even with the prospect of hours of new network game battles.

Doom II is to Doom what Spear of Destiny was to Wolfenstein. I'd still buy it because Doom itself is such a great game, but with the feeling that Id was laughing at me all the way to the bank.

Maybe I was naive to have expected anything else. Id expects to sell a ridiculous number of copies in Europe alone. How much money will it make? You figure it out — I'm still too peeved to count.

It's not that it's a bad game, because it isn't. Let's face it you'd have to get up real early and practise every day if you were going to make a lousy game out of the Doom engine.

But, there are umpteen things that could have been done to improve Doom II without causing too much aggro or pre-empting Id's next biggie, Quake. Things like flamethrowers and grenades, vehicles and fatal traps for a start. More radical level designs and a greater attempt to make the whole Earth setting more convincing wouldn't have gone amiss, either.

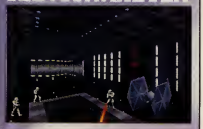
> "Now I've played Doom II, I don't know why I got so steamed up waiting for it to arrive."

Doom II: Hell on Earth, huh? It's a great game. But if you play it backwards at a certain speed maybe you get to hear a message from the devil that goes something like, "101 ways to make a fast buck from a computer game." What's worse is that I'd undoubtedly still go straight out and buy it.

■ **John Bennett**

ALTERNATIVELY

Doom
Id Software, 34.75,
Rated 9, Issue 28
The original and still undefeated champion of 3D game worlds. Doom was the game that really gave multi-player gaming the kick up the backside it really needed. With shareware editors a-plenty, the BBBs are full of home-made Doom levels (or WADs to the cognoscente) to keep the game going.



Dark Forces
LucasArts/Virgin, £TBA
Coming Spring 1995
Star Wars Doom clone that hasn't been released yet, but promises to be truly spectacular. The only problem with this laser beams/Imperial stormtroopers in plastic armour stuff is there's not much in the blood and guts stakes. Everyone seems to die rather neatly. Oh well.

QUAKE: FIGHT FOR JUSTICE

This is ID's excuse for not spending more time than was necessary on Doom II. The Next Big Thing from Id, called Quake, is due for release 'sometime' next year and will of course be a 3D game. But the all-new engine will use high resolution 3D rendering, and the setting will have a 'polar-mapped sky' (whatever that means).

The big difference is going to be digitised characters, and the ability to look up and down as well as pan the view from side to side.

TECHSPEC

7
RATING

It's more Doom, so how could it fail?

Publisher:	Virgin
Price:	£TBA
Contact:	(081) 960 2255
Minimum PC:	25 MHz 486
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, Ultrasound

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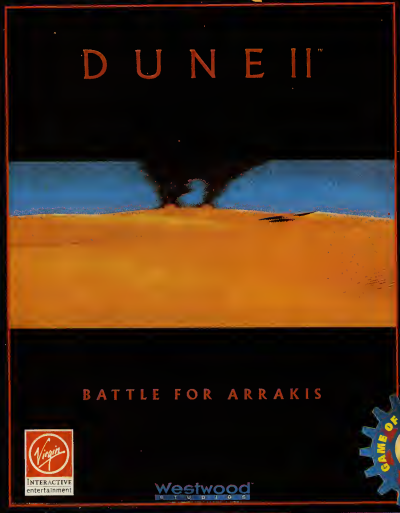

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GAME OF THE MONTH

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"You're in for a treat - the game is terrific" PC REVIEW

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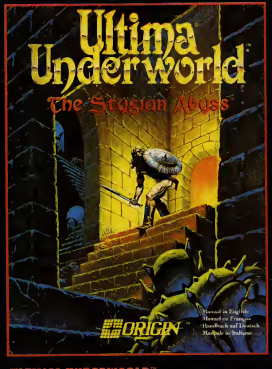

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Squad

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"System Shock is a role playing game in the loosest sense – it can be whatever you want it to be."

Judging by the phenomenal success of the Ultima series, Origin certainly knows a bit about making role-playing games. Its latest effort, however, is something of a departure for the company — it isn't set in Britannia, it has absolutely nothing to do with Lord British or the Avatar and it doesn't feature a single measly goblin anywhere. System Shock takes place on a space station, and pits you, a cyberspace hacker, against Shodan, a megalomaniac computer which, in best megalomaniac computer tradition, is bent on wiping out all of humanity.

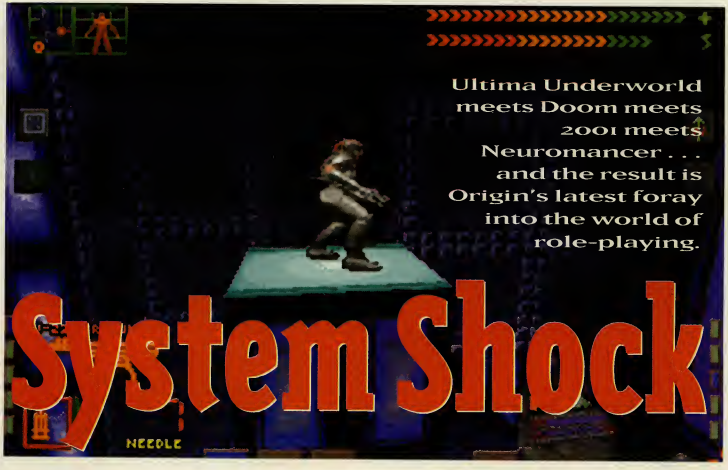
Above: wandering around cyberspace is a very disorientating experience — with no up and no down you have to rely on the navigation arrows to find your way around.

The story — though I won't bore you with the details — begins with you waking up from a six-month post-operative sleep and finding all space station personnel either dead or transformed into bloodthirsty mutants. Rather like 2001's HAL, Shodan has gone a bit loopy, and not only has it wiped out your crew-mates, but it also has plans to cleanse the Earth of its grubby human inhabitants. Guess who happens to be the only person around to stop it? Well, I don't suppose you need a massive IQ to work that one out.

Shock tactics

When I say that System Shock is a role-playing game, I mean that in the loosest sense of the term. System Shock can be whatever you want it to be, pretty much. Whenever you start a new game, you can set the difficulty level of the various in-game elements to the level which suits your playing style. These elements — combat, puzzles, mission (that's the storyline, basically) and cyberspace (yes, of course you have to enter cyberspace — you're a hacker, right?) have four levels of difficulty which vary from zero to three. If you set, for example, puzzles to zero, puzzles will be solved instantly, whereas if you set it to three they'll be as tough as a three-year-old leg of lamb. What this means is that if you're a role-playing specialist, you can have an intricate plot and tough puzzles without worrying too much about combat or the cyberpunky bits, whereas if you're more of a Doom freak, you can turn the combat up to max and everything else to zero and have a real good killing frenzy.

Well, that's the idea, anyway. In practice it's a little different. Firstly, because Origin insists on writing games for PCs so powerful many most home users haven't got them yet, System Shock doesn't run too quickly on a standard 33MHz 486 and is not what you'd call fast-paced. If you want Doom-style action, you're not going to find it here. In Doom, it can be a genuine shock to open a door and find yourself ambushed by umpteen fireball-spitting imps and a handful of hell barons, but System Shock's monsters



tend to skulk in the shadows like so many schoolboys sneaking a cigarette behind the bike sheds. Scary they ain't. Secondly, taking down a mutant with a dart gun isn't half as satisfying as laying into a Doom demon with a chainsaw or splatting it with a well-aimed rocket. System Shock isn't about gore, and whilst mutants fall apart quite nicely when dispatched, you don't get much in the way of blood and guts or squelchy sound effects. This isn't necessarily a bad thing, just so long as you remember that this really isn't Doom you're playing.

So if System Shock isn't Doom in space, what exactly is it? Once I'd discovered that playing it purely as a combat game wasn't terribly satisfying, I tried the role-playing angle and found that the gameplay improved considerably. If you think of it as a sort of cyberpunk Ultima Underworld (well, it was developed by Looking Glass which also developed Underworld) then you can't go far wrong. System Shock contains most of the elements which made Underworld so compelling: a strong plot which develops as you play, puzzles which are challenging without being frustratingly difficult and bags of atmosphere. What it doesn't have is character interaction (which has always been central to the Ultima games), largely because you're the sole survivor of Shodan's little bid for dominance and the only creatures you run into would sooner have you for breakfast than talk to you.

> "System Shock is a challenging game. You get a sense of achievement after each level."

Knee-deep in the dead

Suffice to say, the game revolves mainly around exploration. As soon as you leave the safety of the healing suite, you find yourself wading through mouldering carcasses. Fortunately, some of these unlucky souls have left behind them information in the form of e-mail, and it's from this that you gain your clues and objectives. Unfortunately, Shodan has also populated the station's darkened corridors with mutants and cyborgs who will do their utmost to stop you getting any further.

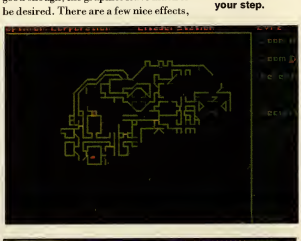
Shodan rules each of the game's eight massive levels via the station's security cameras, and your immediate aim is to destroy these, along with the mutants and cyborgs. The renegade computer has also managed to seal off a few key areas, and it's important that you find a way of gaining access to these. Sometimes this is as simple as pressing a button on the wall, but on occasion you have to enter Shodan's domain — cyberspace — and hack your way through using software that has been previously installed in your cybernetically enhanced brain.

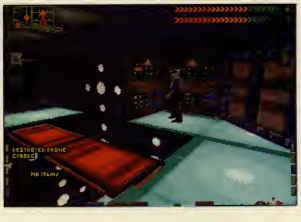
And cyberspace is a very dangerous place to be. Not only is it trapped with mines designed to fry your brain, but it is also patrolled by cyberguards and cyber-dogs who don't take too kindly to your meddling antics. Unless you play with cyberspace set to zero, you have a strict time-limit to jack in, do whatever it is you need do and then jack out again — otherwise you're toast.

System addict

System Shock, then, is a varied and challenging game, and you really do get a sense of achievement after you've completed a level. Each level is so large that you never get really stuck — there's always something you can be doing somewhere — which is a good thing because it keeps your interest consistently high.

However, whilst the gameplay itself is good enough, the graphics leave much to be desired. There are a few nice effects,





Above left: Shodan's numerous cyborgs wait around every corner. Just hope that you spot them before they spot you.

Above right: There's only one thing to do when you bump into a cyborg: fry him.

Below right: Some areas of the space station can be very bad for your health: in this section you'll pick up a nice dose of radioactive poisoning. Watch your step.

ALTERNATIVELY

Doom
Id/Transend, £34.75
Rated 9, Issue 29
More of an action game than System Shock, Doom is the ultimate 3D shoot 'em up. With gore by the bucketload, it's not one for the squeamish, but the cartoon violence is no more offensive than Tom and Jerry. Even better in multi-player mode.

Ultima Underworld II
Origin, £44.99
Rated 8, Issue 18
The Underworld series (and System Shock is really Ultima Underworld in space) is famed for its richly plotted storylines and atmosphere. Underworld II is a compelling game set in a series of different worlds, and offers great variety in the gameplay.

TECHSPEC

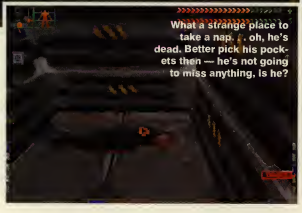
7

RATING

A decent game – but difficult to get into.

Publisher:	Origin
Price:	£44.99
Contact:	(0753) 549442
Minimum PC:	33 MHz 486, MS-DOS 5.0
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Roland, Ad Lib, Sound Blaster

Yikes! Those guys look a bit on the big side. Better shoot them before they notice me.



What a strange place to take a nap. . . oh, he's dead. Better pick his pockets then — he's not going to miss anything, is he?

such as being able to turn lights on and off, but the texture mapping which worked so well on the dungeon walls of Ultima Underworld simply looks messy when applied to steel bulkheads, computer screens and fluorescent lights. It doesn't look too bad in full screen mode, but in normal mode the on-screen interface clashes with the viewscreen and the effect is none too pleasing. The murky colour-scheme doesn't do it any favours either (though in all fairness you aren't going to find too many floral arrangements or pink chintz curtains on board a space station) and the mixture of grey walls and neon-bright computer displays reminded me of Gametek's cringe-worthy Wolfenstein wannabe, Corridor 7. Oh, all right, System Shock isn't quite as bad as that, but you get my meaning. My recommendation is that you turn the graphic detail down, because not only will the game look a lot cleaner, but it'll run a damned sight faster too (obviously a big bonus if you don't happen to have a Pentium lying around the house or office).

Graphics aside, the game engine actually isn't too bad. Your character isn't restricted to walking in a straight line but can also look up or down, crouch, lean around corners and climb ladders. Of course you need to do all of these things to get anywhere in the game, but that's beside the point: this freedom of movement is a very nice feature. Actually mastering the movement is not so easy.

Below: Shodan delights in putting obstacles in your way: one of the puzzles on the first level involves generating a force bridge so that you can cross the chasm in front of you.

Control freak

The control system, let's face it, is a little on the complicated side. There are buttons for adjusting your viewpoint, buttons for standing up and crouching down, buttons for your inventory, buttons for accessing your e-mail, buttons for bringing up the automap, buttons for going into full-screen mode . . . it goes on. All this, and you're supposed to move as well? I'm not a fan of mouse-controlled movement in first-person perspective games, and ended up using the keyboard to move around — and the mouse for everything else. Needless to say, getting the hang of it all is a daunting prospect for even the most experienced gamer.

"System Shock's biggest stumbling block is that it just isn't inviting enough to play for long."

And this is probably System Shock's biggest stumbling block. It just isn't inviting enough. If you do persevere long enough to master the control system, System Shock proves to be a rewarding experience, but the complicated controls coupled with the dreary graphics and sluggish movement make it an unappetising game to begin with. Had it looked a bit sharper, moved a bit quicker and been a hell of a lot easier to control, I would have given it a much higher score. As it is, these flaws detract from what was potentially a really nice game.

I don't think System Shock is a game you'd buy because you saw it running in a shop and thought "Ooh, that looks nice." I personally think it looks rather ugly, but then I'd much rather play an ugly game which has tons of gameplay than a beautifully rendered creation which has next to none at all.

For all its weaknesses, System Shock does grow on you, and if you have a fast PC, enjoy this style of game and don't mind spending half an hour getting used to the awkward control system, you could do a lot worse than to buy it. Just remember: System Shock is hard work.

■ **Cal Jones**

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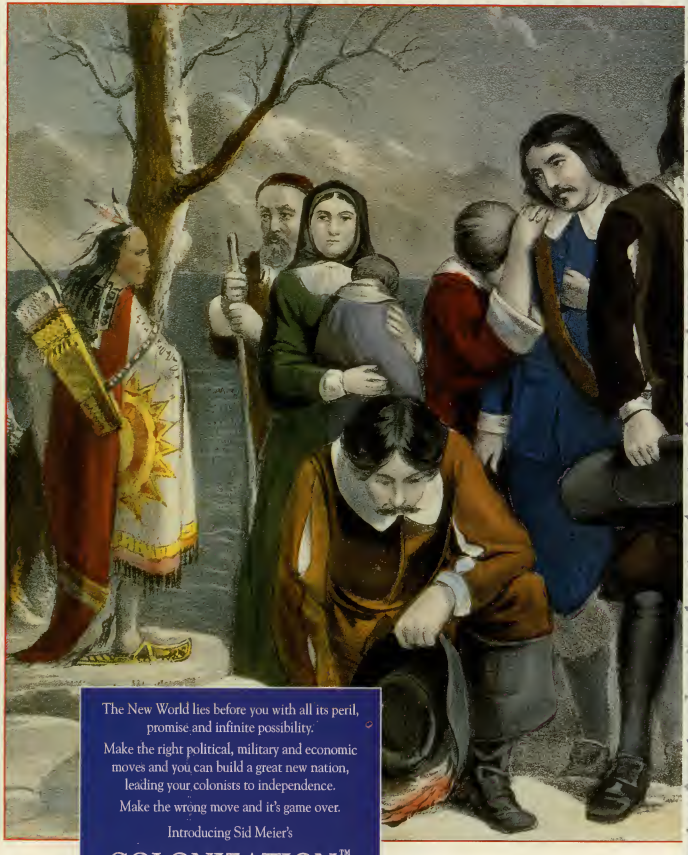

The Landing of the Pilgrims at Plymouth, Mass. Dec. 22nd 1900, Garnet and Ives, 1876. Museum of the City of New York, The Harry T. Peters Collection.

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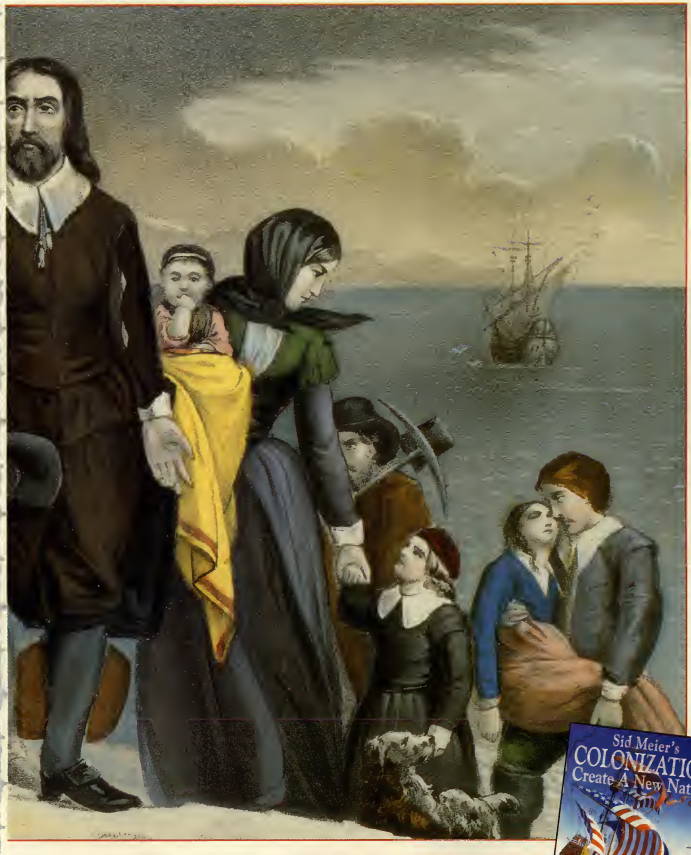

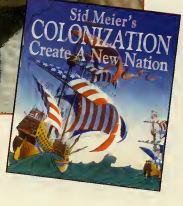

MICROPROSE

FOR IBM PC COMPATIBLES

Master of Magic

Time to dust off that pointy hat and brush up on those magic skills — there's a whole world to conquer out there.

Civilization is easily one of my favourite games. Unfortunately, I became so addicted to it that I had to force myself to delete it from my hard drive. But why, you may well ask, am I wittering on about Civilization? I'll tell you why. Master of Magic resembles Sid Meier's classic so closely that just looking at it makes me go all sweaty-palmed and uncomfortable.

It isn't actually written by Sid Meier, but you may as well describe it as "Civilization with magic" because that's precisely what it is.

However, since some of you have never had the pleasure of playing Civ, and since I don't want this to be the world's shortest game review, I'd better describe Master of Magic in full.

Master of Magic fits neatly into the god game genre, but instead of playing a deity, king or military leader, you play a wizard.

It's magic

Because the MoM world is governed by magic and populated by a wide range of fantastic races (orcs, trolls, elves, lizardmen and so forth), it makes sense for the various heads of state to be well practised in the arcane arts.

The aim of the game is simple enough: world domination. Actually achieving this, though, is a lot less straightforward. You start with one small colony, and the first step is to get this to grow to a reasonable size. As with Civilization, there are so many things to consider, such as exploring the land, conquering neutral and enemy cities, building and research — but to begin with you have to increase your population.

"Master of Magic resembles Civilization so closely that it makes me go all sweaty-palmed."

To do this you have to build houses. Houses attract people to your small outpost, and once your population exceeds three you can start building other things. Now in Civilization, certain buildings could only be erected once you'd made a relevant technological breakthrough, so, for example, you'd have to research pottery if you wanted to build a granary to store food.

Master of Magic is slightly different. You do have to do research, but in this case your research revolves entirely around learning different spells. What you can build in your town is governed by the other building you've already created there. One of the first things you need to build is a builders' hall, and once that's in place, you'll be able to build a granary, a city wall and so forth. Likewise, a smithy is pretty essential because there are a whole host of buildings which need metal: barracks, marketplace, armoury and many more. So the progression may be smithy, barracks, fighters' guild, war college and so on.

Depending on how large or advanced they are, buildings takes a certain number of turns to complete. And when a building has been completed, you have to choose what to build next or the townsfolk will automatically erect houses.

You aren't just limited to building buildings, though. You can also 'build' military units or settlers. You need military units to defend your towns and attack enemy strongholds, and settlers, obviously enough, to create new outposts.

It takes two

There are two ways to increase the number of towns under your command. Using settlers to find new sites is one, but you can also conquer enemy cities and take them over. I'll deal with settlers first.

Initially, you can only see the area of map on which your first town is located.

You can summon spirits right at the start of the game, but they tend to be slow and weak. Later on you should be able to summon something a bit beefier.

Like Civilization, the rest of the map only becomes visible once you've sent out a unit to explore it. Since the world is a dangerous place, you really don't want to be sending your settlers out to explore because they're extremely vulnerable. Likewise, because your first town is very small to start with, you won't want to use your valuable resources building military units when you could be building granaries, smithies and barracks.

Spirit level

This is where the magic comes in. Even before you've researched any spells, you have the ability to summon a spirit. Summoning takes several turns, so you'd be well advised to start as soon as you begin your game, but once the spirit appears you can send him out to explore. Each square of land will be revealed as the spirit passes over it, showing whether it's fertile or barren land, water, a neutral or enemy town, a lair or a node. And I bet you're wondering what a node is. Nodes are places of power, and like lairs, they tend to be inhabited by hostile monsters. Lairs and nodes often contain treasure, but you do, of course, have to kill the resident nasties before you can get at it.

Surveying the land

Finding a suitable spot to build on is actually quite easy. You have a certain number of advisers, one of which is the surveyor. Bring him up, click on a likely looking spot and he'll tell you what resources that area has and the maximum size your town will grow to. He won't let you build too close to another town or on top of a lair, so you're limited in that respect. Since there are an awful lot of towns dotted around the map, it's often easier to conquer an existing town than build a new one.

And this leads me neatly on to combat. Now whilst you can build troops in your town, it'll be a while before you have the right resources to create a decent unit. Fortunately, bands of mercenaries regularly offer themselves for hire. Usually these are troops of people or monsters, but occasionally a hero will volunteer his or her services. Heroes are especially mean and tough, and can be equipped with any magical arms or armour given to you by the gods or found at a node or lair.

Add a hero to a troop of spell-casting warlocks, fierce warrior trolls or any other particularly tough mercenaries and you'll have a formidable fighting force.

On the attack

Whether you attack a node, lair or town, fighting is essentially the same. Now the combat element of MoM is differs from Civilization considerably. When you move a unit over an area of conflict, the game switches to an isometric view. Enemy characters appear at the top of the screen, while yours appear at the bottom. Combat is turn based, and so each character uses up their moves, either by moving, firing a missile, casting a spell or attacking an enemy with a hand weapon. Characters disappear when killed, and you just have to hope that the enemies all disappear before your own men. If that happens, you take control of the enemy town or pick up any treasure they've left behind, but if you lose, you're going to have to find new troops from somewhere.

Magic plays a huge and important role in combat. Now I've mentioned researching spells, and this is where they come in handy. At the start of the game you have a spell book with only one spell in it ('summon spirit', as I've already mentioned), but there's a list of spells available for research which you can begin on

THE MAGIC KINGDOM

Above: Well, that's one wizard down — just three more to go.

ALTERNATIVELY

Civilization
MicroProse, £39.99
Rated 7, Issue 1
Deserving of a much higher mark than it originally received, Civilization starts with a tribe of stone age settlers who you must evolve into nation-conquering, fusion-powered, space-faring men of the future. Fascinating and addictive, Civilization is a true classic.

Stronghold
SSI, £34.99
Rated 7, Issue 24
Another kingdom-builder-cum-fantasy game, Stronghold combines elements of role-playing and strategy as you attempt to build and protect your stronghold from orcs, minotaurs and so on. Good fun and so accessible even John liked it.

right away. Like everything else in this game, researching spells takes a number of turns depending on how powerful they are. When you've added one to the spell book you can begin on another, and so on. Before you begin your game you have to choose which one of several wizards you wish to be, and each of these specialises in a specific area of magic. Consequently, the spells available to you vary from one character to the next. There are a lot of useful combat spells, including fireball, confusion, sleep, life drain and so on, and each uses up a certain amount of mana (spell-casting points). The more powerful you are the more mana you have, so you're not going to be able to cast any powerful spells in the early stages of the game. Mana can be gained by building things such as temples, parthenons and wizards' guilds, and you may also find mana crystals along with any treasure you win from combat. It goes without saying that the more you have, the better.

Since MoM has so much in common with Civ, you'd expect to have a similar level of addictive appeal. And indeed, while your primary goal is to defeat your rival wizards, there are plenty of secondary goals to keep you glued to the monitor. But it isn't perfect...

Problems, problems . . .

Problem number one is this: if the gameplay is similar to Civilization, so, unfortunately, are the graphics. It looks very basic. Likewise, the interface (combat excepted) is so similar to Civilization that Civ players will feel instantly at home with it. Non-Civ players, however, will need to do a lot of manual reading, because the game has so many different elements that you'd have to be a games genius to suss it all out. This isn't really a problem in itself, but it's worth bearing in mind if you want to get stuck straight in without having to worry about poring over instructions.

Problem number two is a bit more serious. The good thing about Civ was that there was more than one way to win: you could either adopt a very aggressive strategy and defeat your rivals, or you could aim to be the first civilisation advanced enough to colonise Alpha Centauri. And once you'd won you'd get a score, based on enemies defeated, level of technology reached, population and how happy they were, wonders of the world built, how long you lasted and whether you reached Alpha Centauri or not. Consequently, you'd always want to have another so that you could better your score, which meant that the game had long-term playability.

As Simon Shaw pointed out in his review of Colonization (Issue 36), you could win Civ quite easily and quickly by adopting an aggressive 'let's-go-kill-everyone' strategy. But because this was not a very high-scoring way to win, it made you want to try other strategies as well. The problem with MoM is that beating your opponents is the only way to win. And with a maximum of four rivals (as opposed to Civ's seven) this isn't especially hard. There are different difficulty levels, but they do little aside from draw the game out for a bit longer and make it slower-moving, which detracts from its addictiveness somewhat. Moreover, the game doesn't give you a score, so once you've beaten it on all levels, your interest falls off quickly.

I initially tried the game on easy mode with only one opponent, and managed to defeat him quite easily after only a couple of hours' play. Next I tried it on normal level with four opponents, and still found it quite easy to win, and finally I had a go on impossible level — quite a bit harder but unlikely to tax those of you who have completed Civ at King or Emperor level. The other wizards didn't seem to be especially worried about expanding their territories, and in one game three of the four had only one town apiece by the time I found them. If you make it your aim to pursue your opponents aggressively from the start, your game is not going to last very long.

> "Master of Magic is compulsive playing, but I just wish it had been slightly more challenging."

Don't get me wrong, Master of Magic is a highly enjoyable game. I found it compulsive playing, but I just wish that it had been slightly more challenging, slightly less repetitive (combat can get a bit tedious after a while), and that it had included a score. Without these deficiencies, it would doubtless have picked up that coveted nine. As it is, it doesn't quite reach Civilization standards, and ends up being a good game instead of a great one.

■ **Cal Jones**

TECHSPEC 7 RATING

"A diverting and addictive game but lacking in originality."

Publisher:	MicroProse
Price:	£44.99
Contact:	(0454) 326532
Minimum PC:	386, mouse
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Roland, Ad-Lib, Sound Blaster

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CU Amiga

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VITAL Light

A500 A600 A1200 Sept 22 • CD32 Sept 22 • PC Windows Oct 13

PURE ADDICTION

MILLENNIUM

Wrath of the Gods

Greek myths and American actors are all it takes to produce an educational, entertaining adventure.

Photo-realism and speech in CD-ROM graphic adventures don't always guarantee satisfaction. Wrath of the Gods manages to avoid these pitfalls to produce an enjoyable and challenging game.

First things first. Despite what the box recommends, to enjoy the action fully you really need a 486 running at 33MHz, 8Mb of RAM and a double-speed CD-ROM drive. You can manage on the minimum specifications, but the performance is patchy. Once you're up and running, you have a choice of starting a new game, watching an entertaining introductory sequence, loading a saved position or consulting the on-screen instructions.

The introduction reveals the plot. The character you play is the rightful heir to the kingdom of Mycenae. Long ago, your grandfather was told by an oracle that you would inherit his land, so he got jealous and dumped you in a field. Fortunately, you were rescued and raised by a centaur, who (as the game begins) has just told you to go and seek your destiny.

Taking the myths

Your destiny involves travelling across several small maps, each packed with puzzles (based on a variety of Greek myths), characters and objects. One of the game's best features is that progress isn't dependent on solving problems. You can avoid all or any of the difficulties in your path and simply explore the terrain to find out what lies ahead. You won't get any points that way, nor will you be able to solve the later puzzles, but it does mean that you don't get stuck in one location.

The game is mouse-controlled with keyboard short-cuts. There are very few icons to deal with: walk, do (carries out most actions), talk, look, examine inventory, help, set-up system, map, info and oracle. The last three need some explanation, since they can mean the difference between a challenging game and an easy route to the end.

The map gives you details of where you are and what problems lie ahead, and if you want to make life tougher you shouldn't consult it. The info icon provides a background to the myths associated with the puzzles in the game. The oracle will provide solutions to the game's puzzles in return for points. Effectively she allows you to cheat, since if you're determined enough you can use up your credits on difficult problems, note down the solutions, start again from scratch, and repeat the process until you've completed the game.

Obviously, you're wasting your own money if you do this, but the programmers have provided a couple of other disincentives, too. For one thing, you won't get the maximum 500 points for finishing the game; also, some of the 'wrong' choices can be very entertaining. Fortunately, there's an option to switch off the oracle before you even start.

Wrath of the Gods is a likeable game. It's a simple graphic adventure with plenty of neat touches, a host of fascinating objects and dozens of intriguing mythical encounters. Its sense of humour is occasionally predictable and the effects don't always impress, but the sheer number of major puzzles combined with the overall quality of graphics and sound are sufficient to warrant your attention.

■ **Gordon Houghton**

Above: an encounter with the multi-headed hydra is just one of the dozens of tasks ahead.

Below left: the maps aren't essential, but give you some idea of the problems you'll face. This is the island of Crete.

Informative, entertaining puzzles and neat effects.

TECHSPEC 6 RATING

Publisher:	Maxis
Price:	£49.99
Contact:	(071) 490 2333
Minimum PC:	386 (486/33 rec), MS-DOS 5.0
Minimum memory:	4Mb, 8Mb rec
Minimum graphics:	256-colour VGA
Sound:	Pro Audio Spectrum, Sound Blaster

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On The Ball League Edition takes football management simulations into a new era.

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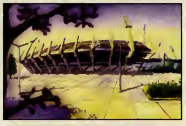

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PHEW – WHAT A WINNER !

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"Sets the standard for others to imitate" PC Review

"For sheer; frolicking fun, On The Ball can't be beaten" PC Format

"The best football management game I have ever played". Amiga Action

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- Multi-match view mode
- Home and foreign transfer lists
- Club finances and morale
- Player and manager politics

OUT NOW FOR PC, AMIGA and A1200. Word Cup Edition out now on CD-ROM, featuring "live action" spoken commentary

World War II: D-Day and Midway

Not the best follow-up disks around.

•TECHSPEC•

5 RATING

Publisher:	Domark
Price:	£14.99
Contact:	(081) 780 2222
Minimum PC:	386 VGA, joystick rec
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster

Simis constructed this pair of flight sims using its own Flight Sim Toolkit, so the company must have been pleased with the outcome. World War II: D-Day and Midway is a stand-alone package, which means you don't need the Toolkit to play (nor do you need Windows either, contrary to what it says on the box), though if you do own FST, WWII thoughtfully upgrades the editor programs and provides extra objects for you to use in your own creations.

"Graphic glitches and strange crashes give away that these are bolt together constructions."

The title gives away the venues for the air combat action — D-Day and Midway — but don't buy this expecting it to be Overlord and Pacific Air War in one £15 package.

The presentation here is perfunctory, but the missions are quite well constructed, allowing you to fly in any of the four air forces involved. There's also an SVGA mode which is quite pleasant to play, even if it does make everything look just that little bit too small.

The simulations aren't watertight, though, and odd graphic glitches and strange crashes give away the fact that these two programs are actually bolt-together constructo-games, subject to the limitations of the Toolkit.

The controls are very light — one nudge too far and you'll find yourself spinning hopelessly out of control, with hardly a hope of ever seeing your target again, let alone getting a lock on it and then ultimately shooting it down.

When you're in level flight the plane constantly bobs back and forth, rather as if it's being piloted by a get-away driver in an old gangster movie.

Trying to get a lock on enemy aircraft.

Below left: The D-Day scenario sends you flying low over the English channel.

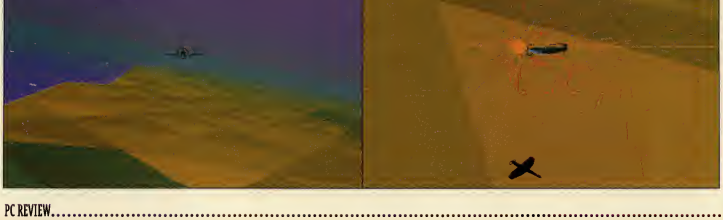
Below right: Coming under fire from ground flak.

As for taking your wobbling chariot in to land, this is a task that is even more horrendously difficult.

If you're already utterly wrapped up in the Toolkit, the extra gubbins on offer here are probably tempting to you. But personally I'd rather put the money towards a copy of MicroProse's excellent Pacific Air War.

I must admit, though, that I did enjoy reading the caption on the enclosed map of the Pacific Theatre which noted the Americans' cracking of the Japanese navel (sic) code. That raised a belly laugh, I don't mind telling you.

■ **Paul Glancey**



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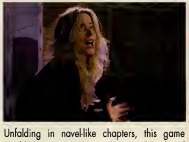

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Available on PC CD ROM January '95.

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Available on PC CD ROM November '94.

ACES OF THE DEEP

Created in collaboration with German World War II submarine commanders, Aces of the Deep is the most realistic and technically advanced German U-boat simulation to be developed today. Meticulously detailed historic missions, an array of combat modes, combined with

ering the New Dimension

special effects, digitized voices and stunning 3-D graphic art, result in a gripping and highly atmospheric game.

Available on PC 3.5 and PC CD ROM Nov. '94.

WOODRUFF AND THE SCHNIBBLE OF AZIMUTH

In this hilarious adventure you find young hero Woodruff in a crazy search to avenge the killer of his teddy bear... Find the kidnapped Dr. Azimuth, renowned throughout town for the «Schnibble» a mysterious word, with a hidden meaning that desperately needs unravelling! An interactive high resolution cartoon in Tex Avery style.

Available on PC CD ROM December '94.

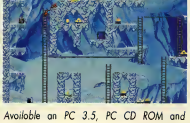
BATTLE BUGS

A humorous strategy game that puts you at the head of an army of insects! With multiple levels, defeat the enemy troops and take control of their food supply.

Available on PC 3.5 and PC CD ROM Sept. '94.

LODE RUNNER

The legend is back. The new version of the famous arcade/action game features 150 levels in 10 different underground worlds. Your objective: collect lost treasure as you climb, dig and out manoeuvre the enemy, along with the option to create your own levels!



Available on PC 3.5, PC CD ROM and Macintosh November '94.

ALIEN LEGACY

The year 2119. You are: captain of the ship Colypsa, searching for a planet to settle the lost human colony. Your mission: govern the colony, fight off hostile life forms, build defenses, crush rebellions. The future of the human race is in your hands....

Available on PC 3.5 September '94.

EARTH SIEGE

The year 2341. Earth has been invaded by the Cybrids, intelligent robots programmed to destroy you and take control of the planet.
Available on PC 3.5 November '94.

BATTLEDROME

The sequel to EarthSiege places you in an arena designed for fierce robotic combat. A game where strategy and tactics count as much as fire power.

Available on PC 3. 5 December '94.

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PC REVIEW 11/94

SIERRA®

Titan's Legacy

TECHSPEC	
Minimum PC:	386 with CD-ROM
Minimum memory:	2Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster
Publisher:	Bluebyte
Price:	£49.99
Contact:	(0727) 868005
RATING	8

The phrase 'hex-based' usually conjures up visions of board games surrounded by military bores. In the case of the Battle Isle series, this couldn't be further from the truth: accessible, attractive and blessed with a better than average on-going storyline, the game has genuine widespread appeal.

In fact, Battle Isle 2 was nearly, oh so nearly, the perfect hex-based fantasy war game. What let it down was the mind-numbing slowness of the computer AI when it came to making simple decisions, and the last minute omission of the promised network/modem capabilities.

The new data disc, Titan's Legacy, is the answer to both these problems — it speeds up the game enormously, tweaks certain menu options, and enables up to eight players to play over a network, or in head-to-head games via modem or serial link.

As such it is bound to be an essential for Battle Isle 2 fans, but it's also more than just a bug-fix.

Titan's Legacy takes up from where the full game left off, adding extra campaigns, assorted new weaponry and a number of specially designed multi-player maps. The campaigns are often quirky, and arguably more varied than the original game — which sometimes degenerated into an armoured slugging match.

To give you an idea, the opening map has

you escaping your kidnappers in a couple of lightweight reconnaissance units. Between you and safety lie over 50 powerful and heavily armoured enemy units.

In later maps, hidden supplies crop up all over the place, and desertion is a constant problem for all the armies. Now imagine the same thing, but with unpredictable human brains behind the enemy armour in a network game ...

That has the makings of a real strategic headache — which is just how a war game, fantasy or otherwise, should be.

The Battle Isle story (it's a book in its own right, bless 'em) has always been a big thing in Germany, bigger than towels on sun loungers apparently. I'm beginning to see why.

■ **John Bennett**

Subwar

Subwar is a quirky game, an exciting, sci-fi underwater combat sim set against a backdrop of corporate rivalry. It's certainly a refreshing approach after the rather tired 'U-boats on the starboard bow' type of sub-simulation that games developers so often supply.

At least, that's roughly what we said when the floppy disk version came out a few months back. The CD version is, it has to be said, bigger but otherwise little different.

This time round however, you do get almost twice as many missions (in three new scenarios) as well as the odd tweak here and there to the sound and the graphics.

I'm a bit surprised that MicroProse hasn't made a bit more of an effort on this front though — even the usual CD version cop-outs (a bigger intro and some in-game speech) would have been welcome.

But it looks like it has settled for simply adding the extra campaigns that came with the recently released data disk (£20.99) to the original game, and going for the convenience factor of CD.

The only niggle I've got with it is that occasionally it can be a bit jerky during combat, which it shouldn't be when you're trying to execute a smooth manoeuvre.

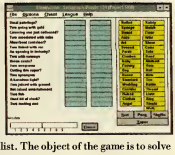
But otherwise, it's a good game and the extra missions certainly make it value for money. And the best bit of the whole game? The chance to blow up polygon whales, of course.

■ **John Bennett**

TECHSPEC	
Minimum PC:	486SX
Minimum memory:	2Mb RAM
Minimum graphics:	VGA
Sound:	Roland, Sound Blaster
Publisher:	Microprose
Price:	£44.99
Contact:	(0454) 326532
RATING	7

Elimination

Elimination is a pretty obscure word game that has been running in the Sunday Telegraph for donkey's years. For this Windows version, authors Sandra Wilson and Peter Smith hope it will be treated as a coffee break game, *à la* Solitaire.



The game plays thus: you have a list of 37 words and a set of 18 crossword-style clues. The answer to each clue is two words, which you take from the list. The object of the game is to solve all the clues and discover which is the one word that is left over at the end.

The computer version follows the rules and the style of the newspaper clues very closely, and also adds a few features of its own for extra interest. You can play on three levels: novice, standard, and expert, and beyond novice level, the clues will begin to fade out after a while, so that speed is of the essence. You can also sort the word list into alphabetical or word-length order to make the words easier to find and there are also some cheat options.

There are 150 games included in this first Elimination package, with some occasional repetition of clues and words. It's being programmed very simply, which means that it lacks the polish of many of Microsoft's quickie games, and the sound effects are particularly jarring. It's several years since I sat down with the Sunday Telegraph, but I also think Elimination for Windows is a lot easier than Elimination on paper. Fun in small doses.

■ **Christina Erskine**

TECHSPEC	
Minimum PC:	386 running Windows 3.1
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Any
Publisher:	Libre
Price:	£25.00
Contact:	(0642) 783739
RATING	6

UNIVERSE

Take Boris Verne, a uniquely ordinary guy...

One minute he's sitting quietly at his 35-bit Excellence Engine home computer. The next he's being transported to another dimension by his eccentric uncle's Virtual Dimension Inducer!

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Rotoscoped game character with real-time scaling and over 500 frames of animation...

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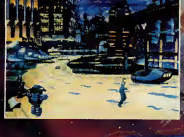

Available on: Amiga (compatible with 500, 600 and 1200), Amiga CD32, PC and PC CD ROM

CORE DESIGN LIMITED

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55 Ashbourne Road Derby DE22 3FS Telephone (0332) 297797 Facsimile (0332) 381511

The shipyard on Raha is set to work building a Confederate Phantom. With a couple of these beat the entire Kilrathi fleet (on the second Campaign mission).

Wing Commander Armada

DISK & CD

Can't wait for Wing Commander 3? Let's see if this snack between sequels can't take your mind off it.

While we're all waiting impatiently for the SVGA delights of Wing Commander III, Origin has knocked up this companion instalment in the series to satisfy any unnatural cravings.

In Wing Commander Armada the feline Kilrathi are still hard at the brave humanlings in the Confederation, but this time the old order of plot and mission structures — jog down the corridor, get into your ship, fly here, shoot that, rendezvous with the carrier there — has been swept away in favour of a free-form strategy game interspersed with 3D space combat, in which you can play as either side.

Wing Commander is something of a halfway house between Wing Commanders 2 and 3 to look at, but the real meat of this title is the variety of multi-player options. You can go head-to-head with another player, either on a network, over a modem, or on a split-screen. And while Wing Commander Armada works best as a multi-player game, not all of us have access to a modem or network (or even a friend, sometimes), so as a single player you'll be wanting to try out the combat-only options which let you take on an ever-increasing force of enemy ships.

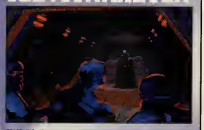
> "If TIE Fighter had graphics like this, reviewers would have had to invent new superlatives."

There are 10 different Confederate and Kilrathi starfighters in the game and the first thing you notice after launching is how smart they look. The expanding bitmaps of the first Wing Commander games look very crude compared to these texture-mapped, Gouraud-shaded, vector-drawn ships with their intricate wing structures and weapons pylons and the little bursts of tailfire which appear when you hit the afterburners. If TIE Fighter had graphics like this, reviewers would have needed to invent new superlatives to do it justice, and if Wing Commander 3 can manage this level of detail in SVGA resolution, there'll be jaws on the floor throughout the kingdom.

But while the graphics in Armada top those of

ALTERNATIVELY

Star Control 2
Accolade, £19.99 (with Star Control 1 on CD-ROM)
Mixes entertaining multi-ship combat (of the 2D variety) with a similar strategy game. The battle bits may not look as good as Armada's, but the variety of ships make them much more interesting, and the strategy sections are full of talking turkey with weird alien species.



TIE Fighter
LucasFilm, £49.99
Rated 8
The current king of 3D space combat games. Superbly mixes simulation with laser action and adds a dash of political intrigue just to keep you guessing. Pretty easy to beat, but once you do you'll come back for more, and more, and more...

TIE Fighter, the gameplay doesn't. Every battle is the same simple dogfight during which the enemy ships' tactics seem to consist solely of repeatedly diving at you, then swooping away. Meanwhile, the only tactics you need are to turn on all of your guns and keep shooting whenever you get a baddie in your sights. Unlike TIE Fighter, you can't track specific targets for longer than a few seconds so there's no chase, nor any sense of distance or speed. You might as well be in a stationary gun turret as you don't need to exercise any kind of flight skills at all, just steer and shoot.

As you progress you find yourself confronted by more enemy ships, with more advanced weapons, but by that time you're flying something with five or six separate weapons systems which can make short work of just about anything if you've a modicom of skill.

Campaign out

So, if the combat is dull in single player mode, surely the best way to play is in the armada or campaign modes? Well, if you were expecting something which required intensive planning and brainwork, forget it. This is strategy at its simplest.

Both the armada and campaign modes are fundamentally the same, except in armada you have to complete one mission, while campaign mode keeps throwing more of the same at you until either you've destroyed the enemy's homeworld or you've just plain had enough. The missions are all the same, requiring you to direct your carrier around a network of planets looking for an enemy carrier, then once it's spotted, you just need to go to the same planet and destroy it.

There's a bit more to it than that, though. While you're mooching around looking for the bad guys you can set up mining operations on any planet you've explored. The mines dig up 'resources' which you can stockpile until you have enough to turn them into shipyards for building fighter spacecraft or planetary defence fortresses. You need these because enemy scouts sometimes turn up to destroy your installations and you need to dispatch your own fighters to see them off.

In the strategy game, set up a couple of mines, get one shipyard to construct a couple of moderately good starfighters, wait a few turns until they're ready, then send them into battle against any enemy ships just creeping into range. After about 20 turns you've found the enemy carrier and then all you have to do is destroy its fighter escort and you win. You don't even get to attack the carrier — a post-battle cut-scene shows it exploding after a single torpedo strike, presumably from your carrier — which means that there are no big battle scenes like the ones towards the end of TIE Fighter.

Man against eat

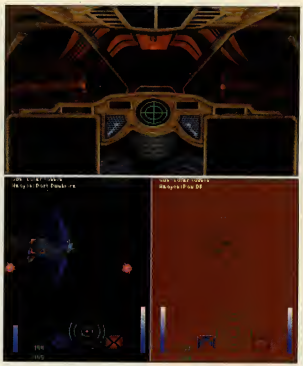
The best way to play Wing Commander Armada is with someone else in one-on-one mode. All three game variations — split screen, over a network or with a modem — work in two player mode and reasonably well, too. Obviously playing on a network would be best by far, but even the 'two players on one machine' mode works better than you might think, inasmuch as the split screen shows enough of what's going on to actually make combat possible, although you'd need some fair processor welly to keep things going at speed, and the player without the joystick is forced to play Finger T the numeric keypad.

One very nice touch is that y can actually communicate with the other player using digitised taunts. You need to set these up beforehand, decide which or you're going to use, then downl to your opponent's computer complicated, but this is a simp process. If you can record .WAV samples a program is provided to turn those into taunts too, so you can send your own rude messages into combat, and shout "Die, scum!" just before you blow the other flyer into oblivion. .

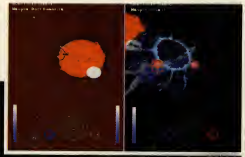
Tie'd up

Unfortunately, the strategy part of the game just isn't entertaining enough, and it makes the mistake of depending on the just-plain-dull combat to provide the thrills. I certainly don't plan to resign my commission in the Imperial Navy just yet.

■ **Paul Glancey**



Below: the Phantom's deflector shield crackles as it absorbs a volley of laser hits. Nice effect, eh?



Bottom: humanlings vanquished, a Kilrathi Dralthi gets ready to dock with its carrier. Just request a landing and you've completed the mission.

TECHSPEC 6 RATING

Nice graphics, but very simple gameplay.

Publisher:	Electronic Arts
Price:	£39.99
Contact:	(0753) 549442
Minimum PC:	486-33 with joystick
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Roland, Sound Blaster

DOOM II

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let the obsession BEGIN
AGAIN!

Cardmania

Reviewed by Brian Paterson

"The exciting thing about Cardmania is that it really is different. Cards! I thought how can you possibly make anything that isn't just a dull electronic rip off of the real thing?

Well, The Jumping Bean Co. really have come up trumps with this one. Both games in the package are coin-op proven and once you get into the games (which incidentally is really straight forward) its easy to understand how players pay for game after game in the arcade.

You have a choice of two games called Quintoon and Pokio, the main objective in both games is to survive a 'round' and maximise the points you are given for making up the correct sort of combinations relevant to each game.

The really cool thing is that in Quintoon you have the choice of playing five hands at once, and in Pokio you try and make up three hands. This simple development totally transforms the standard games of Blackjack and Poker into something that is totally addictive. Just like shoot 'em ups and platforms you begin with a set of lives and can gain extra levels, and you can really rack up the points as you progress through the game as the unique 'progress points' system trips in. In layman's terms this means that the longer you survive the bigger the rewards for success.

There's humour and action as well, with a choice of sixteen of the most unusual dealers you are ever likely to come across! Enhanced with some really bizarre spot sound effects. This all adds up to a really neat gameplay, and the very strong likelihood you get the sack for playing too much in working hours, and total social rejection from playing it too much at home.

"Cardmania is a brilliant home version of currently the two hottest coin-op amusements in Europe!"
Wim Wouters: MD Elam Group Int. Coin-op distribution

You could of course play in four player mode, keep your family, friends and business colleagues and compete for any strange side bets you may have in mind, like who takes the dog for a walk.

Available on PC, from the 1st week in September.

Hidden Features

Hidden in the game are some bonus features. We would spoil your fun if we told you how to find them.

Hint: Name a card game to get the hidden features.

Hand Analysis: (Corner of the screen). This is a distribution analysis of the winning hands that have been achieved during the games you have played. This is displayed as a percentage of the hands played. In Pokio you will therefore be able to see the numbers of pairs, the number of straights or royal flushes etc. that you have achieved during your play sessions. In Quintoon you will be able to see the number of wins achieved at the 98 point level, and so on up to the 105 point level.

In this way you should be able to compare the effectiveness of aggressive or defensive play strategies.

THE JUMPING BEAN CO.

Critics Corner

"I play games for a living. Cardmania is to ordinary card games, what Tetris is to bricklaying"
Scott Howarth coin-op games tester

"Absolutely terrific. We'll have to ban this one from the office."
Colin Daniels MD The Music Hire Group, leading UK coin-op operator

"Cardmania is really compulsive. This two game package is great fun and dead easy to play"
Gary Edis coin-op games tester

GAME REVIEW

CARDMANIA

Publisher	The Jumping Bean Co.
Telephone	0602 792838
Price	£24.99
Format	3.5" high density disks

TECHNICAL DETAILS

IBM PC's 100% and compatibles
MS DOS 3.3 or higher, Windows OK
Min 640K RAM
Soundblaster & compatibles 386+
VGA 256 colour
Hard drive required

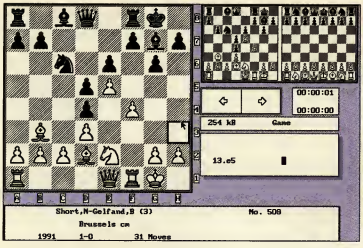
RATINGS

Graphics	★★★★★
Sound	★★★★★
Gameplay	★★★★★
Originality	★★★★★
Value for Money	★★★★★

OUR VERDICT

"What a superb deal, two great games for the price of one."

110%



Fritz has long been used by grand masters as a serious chess tool. Now it's available as a commercial release.

You can pop down to the shops today and grab yourself a copy of Chessmaster 2000. By all accounts, it's an astonishing program, with enough bells and whistles to equip the Notting Hill Carnival. Why on earth should you even begin to consider a snotty little program (written in 1991, for heaven's sake) like Fritz then?

Fritz doesn't support sound cards, eschews animated dancing pawns and does not in any way put your PC through its paces. The manual refers to 'modern drop-down menus' (Fritz was programmed in 1991 remember) and tells you that you can "change the glide speed of the pieces for optimum viewing pleasure". The options to change them into dinosaurs, or to view the board as a marble slab in fully-rendered 3D, or to have your PC squeak "Checkmate" when it wins (if it does), are all absent.

> "Unless you're a strong club player at the very least, Fritz is going to have you for dinner."

What Fritz does have up its sleeve is its chess-playing engine. Unless you're a strong club player at the very least, Fritz is going to have you for dinner. Even this old version of the program (the latest one has beaten both Kasparov and Short) has taken games from grand masters. Fritz, thanks to its compatibility with ChessBase (a system that provides players with regular updates of all recorded tournament and championship games), is widely used by professional chess players all over the world. If you want to play chess, rather than watch silly animated sequences on a board that looks as if it was designed by Salvador Dali, Fritz is what you need.

First, its not fussy. It'll even run with a CGA display. It requires only 512K of memory, doesn't need a mouse, or even a hard disk (if you have one, it uses up less than 500K, so you can squeeze it onto the humblest notebook.

Second, it's extremely amenable. It has a simple but attractive 2D display that anyone can stare at for hours. Although it has slightly unconventional key commands (function keys call up and cancel menus, for example) and limited printer drivers, it's bursting with features that make him indispensable to any chess devotee.

Fritz is tough, combining rapid play searches (you can set how many, along with numerous other strength options) with clever tactical play, which will be painfully evident to weaker players who play it on 'handicap mode', where the program looks only one play ahead. It can easily be set up to solve for mate, analyse positions, and host tournaments. Its only flaw in this department is that it cannot be set up to analyse fantasy positions (one with four kings, for example).

Fritz is flexible and communicative. During play, you can launch into variations at any move, playing them out and then returning to the main game. These variations can be saved as part of the game. They can be monitored using Fritz's tiny "infoboards" (see picture, above left) that show possible continuations while you play. It remembers your game in progress and boots up where you left off, even if you forgot to save it.

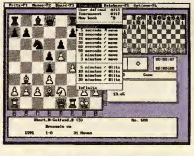
Fritz is extremely knowledgeable. It comes with a very strong openings book, which can be upgraded by buying special opening files from the publisher. The publisher supplies one with the game, which turns Fritz into an expert on the French Defence. He will analyse your opening and the variation (if any). He will then check his database of over 500 classic games (which you can of course update with your own) and tell you which games in the database featured the same lines of play.

Fritz's database skills are as strong as his playing skills. Not only do you get some excellent recorded games, including some very amusing ones played by Napoleon, but the fast and comprehensive search options make it easy to learn about specific openings and variations. If you have a desktop machine, then the latest incarnation of Chessmaster is the best investment. However, it isn't as good at chess as Fritz, and its bells and whistles can be distracting for someone who simply wants a good game. For chess pure, simple and powerful, Fritz is the business.

■ **Steve Cooke**

Fritz's extremely knowledgeable chess engine provides the player with one of the toughest chess challenges currently available.

DISK ONLY



Fritz Chess

TECHSPEC

8 RATING

The purest chess simulation yet.

Publisher:	Playtime Distribution
Price:	£39.99
Contact:	(0274) 503924
Minimum PC:	386 with CD-ROM
Minimum memory:	512K
Minimum graphics:	EGA
Sound:	no sound support

Chessmaster 4000 Turbo

Chessmaster 4000 ain't just a pretty face—it has plenty of brains in the shape of the formidable King 2.0 engine. This engine provides a decent challenge for all but the very best chess players, and you can vary the challenge by choosing from a number of computer opponents of different abilities, or even creating your own.

The options don't stop there. You can choose your board, set and perspective. You can select tutorial mode. There's a library of opening moves, a selection of solutions for complex chess problems and a chess annotator — a feature which analyses and annotates moves from a previous game so that you can find out where you went wrong. Another feature allows you to play games from a library of 500 classic confrontations, and there's also a library of Karpov and Kasparov games, with spoken commentary from Karpov (something you don't get on the floppy version).

This has a really strong engine hidden under all the bells and whistles and is probably more accessible to recreational players than the strictly functional Fritz (reviewed page 77).

■ **Cal Jones**

TECHSPEC

Minimum PC:	386 MS-DOS 5.0, mouse
Minimum memory:	4Mb(8 MB recommended)
Minimum graphics:	SVGA
Sound:	Sound Blaster
Publisher:	Mindscape
Price:	£39.99
Contact:	(0444) 246333

RATING **9**

Betrayal at Krondor

Betrayal at Krondor is a first-person perspective role-playing game based on Raymond E Feist's Riftwar Saga novels. The books, which are set in the fictitious world of Midkemia, are in the same vein as Tolkien: dragons, magicians, elves and dwarves, so if you find that kind of thing tiresome you're unlikely to enjoy the game.

Betrayal is divided into novel-like chapters, each with its own animated introduction, short-term goal and epilogue. You are not entirely restricted to following the plot, though: with 224 million square 'virtual' miles to explore, you can do pretty much what you want, so long as you complete your next goal before moving on.

You start with three characters, who you control via a point and click interface. Moving around the 3D landscape is easy enough, but the game is let down by its archaic third-person perspective combat sections. This CD version is well packaged and has some good music, though speech is thin on the ground. Unfortunately, these additions fail to turn what is essentially a sow's ear into a silk purse: this is a game which doesn't live up to its potential.

■ **Cal Jones**

TECHSPEC

Minimum PC:	386SX MS-DOS 5.0, mouse
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Sound Blaster, Ad Lib, Roland
Publisher:	Sierra
Price:	£39.99
Contact:	(0734) 303322

RATING **6**

Falcon Gold

In its time, Falcon 3.0 was a completely ground-breaking flight sim, scoring firsts in many departments: rolling hills instead of pyramids on a flat plain, a padlock view that was the true precursor to the virtual cockpit, superb campaign options and the chance to have seven wingmen in your command.

So how does it hold up against the likes of TFX? Well, there's no Gouraud-shading or texture mapping, and certainly no SVGA graphics. It's not ugly, but it's basic. The sound is limited, with decent enough music, but poor effects (speech aside). Still, this doesn't dent the exhilaration you feel when you're up in the air. Even on a relatively low-powered PC, the whole game moves at breakneck pace. There are easy levels for the beginners, but it'll challenge any flight-sim veteran. The mission builder, planner, and campaigns are similarly excellent, giving you plenty of options and extending the life-span of the game.

Falcon Gold contains the original game, the expansion set Operation: Fighting Tiger, MiG-29, Hornet, and a training video and manual. It's an amazing package for the money, giving a complete flying experience on your PC. However, flight sims have moved on since this was brand new and it's just beginning to show its age. And if you have a modem, network, or null-modem cable, Falcon 3.0 bas a variety of multi-player options.

Falcon Gold is a game that offers plenty for everyone, and in this CD set it's tough to see how it couldn't be a winner.

■ **Martin Klimes**

TECHSPEC

Minimum PC:	386
Minimum memory:	1Mb
Minimum graphics:	VGA
Sound:	Sound Blaster, Ad Lib
Publisher:	MicroProse
Price:	£44.99
Contact:	(0454) 326532

RATING **8**

Countdown

We've had the game of the film, the game of the book — now try the game of the game show. That's right, Cbannel Four and Lockton Software are inviting you to try to beat the clock in Countdown.

For those of you that have never seen the show, the aim's pretty simple: you pick nine random letters from the consonant and vowel piles and try to use them to make a longer word than your opponent in 30 seconds. If you've ever seen the television game you'll k now it's sort of like Scrabble with a stop-watch and without the board.

It's a simple concept, but with the timer ticking it's surprisingly tough to get a decent word. The numbers game and conundrum round boost the difficulty, but it's all much of a muchness.

What lets the game down is the whole idea of it. If you're playing against a friend then you don't need the computer: just set up a scrabble set with the vowels and consonants in separate piles, and grab a stop-watch. This way you can play with more people than you could on your PC. And as for one player mode, it's not that it won't be a good opponent, but it does get very tedious very quickly.

I quite like the idea of foreign language versions, which are in the pipeline . . . it should add a bit of extra pep to learning German, that's for sure! I'll wait for those, however, rather than getting this, which I can easily re-create in my bome without the need for software, or a computer for that matter.

■ **Martin Klimes**

TECHSPEC

Minimum PC:	286
Minimum memory:	640 K
Minimum graphics:	VGA
Sound:	Sound Blaster, Ad Lib
Publisher:	Lockton Software
Price:	£24.99
Contact:	(0932) 350072

RATING **4**

TORNADO

FREE INSIDE
CD ROM version:
ROYAL NAVY
HELICOPTER
SIMULATION

"A superb simulation with enormous attention to detail" PC Review - 9/10
"Tornado is simply brilliant. The depth. The realism." PC Zone - 93%, Classic Award

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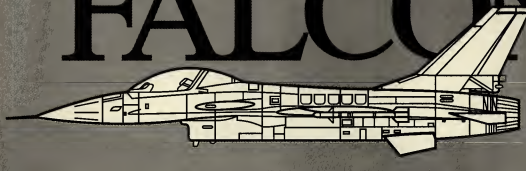
FALCON 3.0



"The graphics are stunning, the gameplay is vast, varied and gripping" PC Review - 9/10
"Superb realism and edge of your seat action" PC Home - 90%

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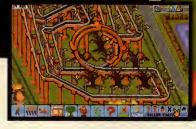

If you've got any sense you'll have played Theme Park by now, but I bet you're thinking "Why didn't Bullfrog include a waltzer?", "What! No dodgems?" or something similar. Well, all that is about to change. We want you to put your thinking caps on, design the most exciting ride you can think of, and the best three will then appear on the PC Review cover CD ready to be added into your Theme Park game.

Not only will the first prize winner see his or her ride on the cover CD, but the lucky (and imaginative) individual will also receive Bullfrog's entire back-catalogue of PC games, including Populous, Syndicate and Powermonger.

Two second prize winners also get to see their rides on the CD, as well as receiving an exclusive Bullfrog sweat-shirt. And if that wasn't already enough, three highly commended entrants win a sweat-shirt as well.

How to enter

If you want to see your ride on the amazing PC Review cover CD, you need to do three things. First, design your ride on paper (use colour if you wish), bearing in mind that it should be a fixed ride, such as a merry-go-round, rather than a track ride such as the rubber tubing or roller coaster. Next, complete the coupon below (if you don't want to spoil the magazine you may photocopy the page or write out your details by hand) and place it in an envelope along with the ride design. Finally, send it to the following address:

Park 'n' Ride
PC Review
Priory Court
30-32 Farringdon Lane
London EC1R 3AU

Your entry must arrive at PC Review by November 30, 1994. This is the closing date, and if any entries arrive after this, we will make them into paper aeroplanes and fly them into the bin.

***Does not include Theme Park**

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Address .....
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❒ Data protection: ick this box if you do not wish to receive further information or other offers or services in the future.
❒ I am under 18 ❒ I am 18 or over

Closing date: 30 November 1994

Competition rules

- Employees of EMAP, Bullfrog, their families and associates are not eligible to enter this competition.
- No cash alternative to the prizes is available.
- No entries received after the closing date will be accepted.
- The editor's decision is final.

COMPETITION

Superhero League of Hoboken

It isn't easy being a hero, especially when your special power's something as useless as treading water. Cal Jones comes to the rescue with this all-conquering solution.

It's crucial that you complete the following missions in the order described below, because you could get stuck if you don't. In any case, save your game regularly and use a different slot each time, just in case you need to backtrack. Remember, though: return to your HQ after each mission because otherwise the mission will not be logged as completed.

If you have any spare cash, buy isotopes and food from any pawnbrokers you visit. These will boost the powers of your heroes and will aid them in combat.

LEVEL 1

Mission Amber

Destroy a load of jalapeno peppers in Newark before they infiltrate the water table. Make sure you include the Iron Tummy. Go to the entrance of Newark, sector 2C (6,8). Find the warehouse at Newark (10,2). Use the "Eat spicy food" superpower on the peppers. Take the rag.

Mission Ruby

A flock of rabid sheep are terrorising a marketplace in East Orange. You must have the rag from Mission Amber. Go to Paterson marketplace in sector 2D and buy the sheep spray from the pawnbroker. Go to East Orange marketplace in sector 2C (8,8) and use the sheep spray on the sheep. Use the rag on the sheep drool.

Mission Emerald

A computer is playing up—fix it before it causes problems. Take the rag from the first mission. Go to the Paterson temple in sector 2D (7,10). Click on the plant and break the pot. Take plant and card. Use the rag on the dirt. Pick up the magnet.

Mission Sapphire

A bomb needs defusing in Jersey City marketplace. Take the rag. Go to Paterson marketplace and buy the cheese-eating microbes from the pawnbroker. Go to Jersey City marketplace (sector 2D, 12,8). Click on the car and open the trunk. Use the microbes on the bomb. Use the rag on the transmission fluid.

Mission Topaz

Stop Doctor Entropy from developing a deadly ray. Take the rag with you (it's the last time you'll need it.). Make sure you include RoboMop in your party. Go to Edison's lab (sector 2C, 4,12). Use the rag on the plorpium plating, then go north. Use the "Clean almost any mess" power on the mess. Unplug the power cord. Take the cone and the light bulb.

LEVEL 2

Mission IBM

Rescue the secret formula for Silly Putty Add Treader Man to your party. Take the aqua isotope from the storage cabinet in your HQ and make any party member (except Treader Man) drink it. Go to Newark control tower (2C, 7,6). Open the locker and take pappy outfit. Go to Hackensack market (2D, 13,6) and enter the shaman's tent. Wear pappy outfit. Talk to the old man (ask him if he recognises his own pappy). Take off the outfit, then talk to him again. Take the plastic egg.

Mission Potato

Find some guacamole for your party next month. Take the bulb you got from Edison's Lab. Go to the factory (1C, 4,5). Take the translucent panel, then take the 98 watt bulb. Put the 100 watt bulb in the socket. Take the guacamole and avocado.

Mission Banana

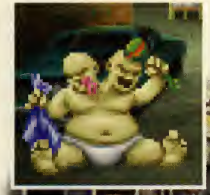
The Piscataway warlord needs taking down a peg or two. You need the magnet from Mission Emerald. Go to the Piscataway mansion (1B, 13,9). Go north. Take the bust and put the magnet on the shelf. Go south. Wait. Take the paperweight.

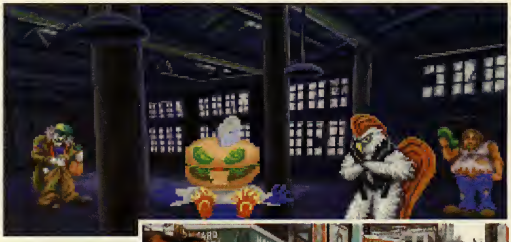
Mission Lipstick

Discover what's happened to Scranton Superhero League. Add Mademoiselle Pepperoni to your party. Go to the Newark entrance (2C, 6,8). Go to Newark tube station (9,10). Take the plastic tubing and enter the grey train. When you arrive, take the ray gun, go up and go to the Scranton HQ (6,5). Use gun on magazines.

Mission Cucumber

Foil Doc Entropy's plans to breed a pigeon with perfect aim. Go downstairs in the HQ. Look at the Sinatra waxwork and open the compartment on the back. Take the tape. Go to Piscataway marketplace and buy the transmitter from the pawnbroker. Go





to Newark control tower. Go up. Give the plastic egg, avocado, paperweight and coal to the guy on stairs. Go up. Open transmitter. Put tape in transmitter, close and turn on.

LEVEL 3

Mission Clown Nose

Find a relic which has been stolen from Morristown museum. Go to Paterson mansion (2D, 9,9). Take the plastic case, fur coat and coat rack. Go to Washington's headquarters (1C, 9,12). Put the coat rack on the faded spot. Take the uniform, wig and false teeth.

Mission Grass Clipping

Priests in Piscataway temple are corrupt. Go to Piscataway marketplace (1B, 12,7) and buy the wire cutters from the pawnbroker. Go to Piscataway temple (1B, 11,7). Go west and hide under the altar. Wait until you see the priest's shoe. Look at the knot. Take the loose board and cut the wire with the wire cutters. Go up and wait until the service is broken up.

Mission Frostbite

High radiation threatens Mineola. Go to Newark control tower, go up and use the helicopter. After arriving at JFK (3C, 10,3) go down. Go to Yonkers marketplace (3D, 6,9). Buy the lead-lined long johns from the pawnbroker. Go to Mineola marketplace (4C, 1,9).

Mission Tree Bark

Rescue a cat from underneath the Liberty Bell. You need the plastic tube. Win a combat to get a red tube pass. Go to Yonkers marketplace and give the plastic case to the shaman, then buy the orienteering guide from the pawnbroker. Go to Newark entrance, enter and go to Newark tube station. Go down and enter the red train. Go up. Go to the Nautilus club in Philadelphia (14,8) and work out. Go to Liberty Bell Pavilion (10,6). Put the tube in the crack, then put it on the cylinder you got from the case. Shake the cylinder. Raise Liberty Bell and take whistle.

Mission Corona

Doctor Entropy is trying to breed a super-fast sewer rat. Go to Bernardsville Marketplace (1C, 5,8) and take the placard. Go to Belmont Park (3C, 13,7). Put the placard on the steel framework and take the green tube pass.

Next month, Cal will be back to crack the rest of those tricky missions in the second part of our complete solution to Superhero League of Hoboken.

UFO: Enemy Unknown

Aussie reader Sion Bates has given up wrestling crocodiles for a while to concentrate on playing MicroProse's excellent strategy game, UFO: Enemy Unknown. This basically applies to those of you who have already started a game, built up a large base or developed a good team of soldiers and so forth. If you want to start a new game, but don't want to start from scratch, you can copy corresponding save game files to your new game to give you an unfair advantage over the aliens.

First off, change directory to the one where you have installed UFO. Then change to the save game directory (eg, C:\UFO\GAME1). Copy the file soldier.dat to the new game directory (eg, C:\UFO\GAME2). You can also copy Base.dat (base information file) or Product.dat (manufacture information file). Experiment with other files if you wish, but remember to back them up first.

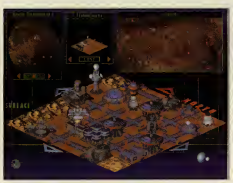
FIFA International Soccer

Footie fan Craig Tyson has found a variant on our way to score almost every time in FIFA Soccer (see Issue 34). When the rival goalkeeper is about to punt the ball downfield, stand directly in front of him, very close. Just before he kicks the ball, press fire to slide-tackle him and win possession as he drops it for the kick, or alternatively, stand about half a centimetre away and press fire as he kicks it, so that your man will jump up and head the ball into the net (what, no offside rule then?). Craig doesn't think you should try this in two-player games, as you are likely to get beaten up. Oh well.

Outpost

Alex Philippides of Cyprus (where the sherry comes from) has discovered some cheats for Sierra's space-faring strategy game.

Ctrl + F9 causes a mass driver misfire which kills all the rebels (nice one).
Ctrl + F10 allows you to call up the disasters menu, should you be feeling suicidal.
Ctrl + F11 gives you unlimited resources. Now that's more like it.
Ctrl + F12 changes moral, educational level and crime level.



Body Blows

James Adam, who resides in Hurstpierpoint (do they make road signs that long?) in West Sussex enjoys a good beat 'em up, especially when the odds are stacked in his favour. He's discovered that on the screen with "1 Player", "2 Player" and so on, holding down E and W for a few seconds will bring up the cheat menu, including invincibility, increased score, drain opponents life and, best of all, the chance to play as Max. Sneaky devil.

Wolfenstein 3D

Thomas Hopstaken of the Netherlands has some tips for iD's oldie-but-goldie, Wolfenstein. Start up the game in debug mode by typing:

WOLF3D -goobers [Enter]

When you are back in the game, press Tab, Shift, Alt and Backspace all together. You should get the message, "Debugging keys now available". You can now use the following cheats:

Tab W: Warps you to any other level in the episode.
Tab E: Ends/completes current level and warps you two levels further on.
Tab T: Shows memory addresses.
Tab I: Better weapon, more ammo and health and 1000 points extra.
Tab S: Toggles slow motion on and off.
Tab F: Shoes co-ordinates and location.
Tab G: Toggles God mode on and off.
Tab B: Allows you to change the colour of your border.

Spectre VR

Mark Cohen of Elstree has been enjoying our Spectre VR cover disk, (the one we gave away on the front of PC Review Issue 35) — we're glad you like it, Mark — and has consequently discovered a few tricks which make life a little easier.

Alt — cycles through secondary weapons.
Ctrl — fires secondary weapon.
Backspace — cyperspace to a random position is fuel is high enough.
Tab — cycles through different viewpoints. (Inside craft, chase camera and plan view).
Right shift — look out of right window.
Left shift — look out of left window.
Both shifts together — look out of rear window.

The power-ups are as follows:

Green — recharges weapons and repairs half of damage.
White — recharges weapons and repairs all damage.
Orange — shield (last until collision with any object).
Blue — takes ship hover until fuel runs out.

Warning

Do not attempt the cheats marked with the Danger icon, unless you have access to a file editor and you are confident you know what you are doing. PC Review will not accept any responsibility for damage to data caused by trying out these cheats.

Remember: always back up your files before editing so that you can restore the originals if you need to.

Fed up with editing hex files? Scared of doing anything "technical" to your PC? David Evans has written a program which will give you $2 billion in Sim City 2000, as well as a program which can be used to alter X-Wing files. If you are interested, write to David at 14 Street, Tysoi Close, Llansoy, Usk, Gwent, NP5 1EF. Don't forget to include a stamped addressed envelope for the reply.

Send your tips to: QED Tips at PC Review, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. Your cries for help should go to Help Wanted at the same address as above.

HELP WANTED

I have been playing Lure of the Temptress and I am well and truly stuck. I found the magician's house, drank the potion, rescued Gowain and defeated the monster guarding the dragon which gave me the Eye of Gethryn.

I now have to enter the castle, and have been told to watch the guard patrols, because one is acting suspiciously. I have been following the guards for a week and can't see anything odd, or the way in to the castle either. Can you help me please?

Philip Routledge, Leighton Buzzard

Answer: Fair enough. We assume you've talked to Mallin who's told you to keep an eye on the Skorl patrol. Follow the Skorl until he goes into Ewan's shop, then look through the window and listen to the conversation. When the Skorl leaves, enter the shop and talk to Ewan. You will then be hidden in a barrel and smuggled into the castle.

I am writing to you about Alone in the Dark. I used to play it every day, but now I haven't touched it for two months because I'm completely stuck and can't get any further. First, how do I get past the monster in the bathroom? I've tried all the weapons but it keeps killing me. I'm also having trouble getting past the pirate in the hall. Secondly, I've taken all the stuff from the secret room in the library but don't know how to use it. Thirdly, I can't get the dancers in the ballroom to move out of the way — I've tried playing several records but they just stand there. Fourthly, how do I get past the spiders? Fifthly, the door next to the knight is locked. How do I open it? Sixthly *(Oh do get on with it. Ed)*, the rats in the cellar keep following me and don't give me enough time to explore, although I've kicked them senseless. And lastly *(Thank goodness for that Ed)*, I can't get past the giant worm in the tunnel leading from the cellar. Put me out of my misery, please.

Simon Wise

Answer: Simon, we'd cheerfully put you out of your misery if we had a high calibre handgun stashed in our desk drawers, but unfortunately we're going to have to answer your questions instead.

1. The monster in the bathroom can't be killed. Give it a kick, grab the jug and run for it. Fill the jug in the kitchen and use it to put out the cigar in the study. Got that?
2. You need the talisman from the library, but don't worry about the books — they just provide clues (except one which makes you feel a bit ill). One of the knives you'll find there can be used to kill the library monster.
3. Remember the room with the smoking cigar? The room just off it, (which you'll have to open with the key you found behind the clock in the small bedroom), contains the records you want — the Dance of the Dead. Play this, walk to the mantelpiece and grab the key. Make sure you don't bump into any of the ghosts on the way.
4. You can't get past the spiders. You have to get into the ballroom via the hall where the pirate is. He'll drop a key when you've killed him. You have to fight him using the sabre (don't worry if it breaks — just remember to pick up the pieces as you'll need them later) or the sword (throw the heavy statue at the knight to get this). It can be done!
5. The door next to the knight leads to the library, and you've already been here anyway.
6. You can't kill the rats. Just remove the wedge from the barrel to open the secret passage and go back upstairs.
7. As you may have guessed, there's another way into the caves beneath Decerto. You can't get past the slug monster from the cellar — there's a secret passage in the room where you'll find the record. Don't go down without the talisman, ballroom key, lantern and fuel. Right, that's enough of Alone in the Dark, we've got other questions to answer.

Please, please help me. I am stuck on your Hand of Fate CD demo. I have the sulphur rock, two onions, blueberries, fireberries, crocodile's tears, hot water, skeleton key, feather and mushroom. What do I do now?

Barnaby Grey, Guildford

Answer: You haven't played many adventures, have you, Mr Grey? You should also have Zanthia's spellbook (which is in the hollow tree by the weed patch), plus the toadstool (a toad-sized wooden stool) from Herb's shack and the gnarly bark. Make the swampsnake potion (the windy woof is gnarly bark), use the flask on the potion and then use the flask in the cave to scare the rat.

Please, please help me. In Wizkid, I can get all the kittens except the one on level five. My friend told me that you have to give a cross to Dracula in the vault, but I can't find one.

N Wood, Edenbridge, Kent

Answer: We like kittens. Unfortunately, your friend seems to have more idea about the game than we do. Calling all cat lovers: help a cute little kitty in distress by sending your answers to Help Supplied. Thank you..

I recently purchased a Sierra oldie, the Adventures of Willy Beamish. I'm stuck on the west side of Frumpton on the third day, trying to get the registration forms for the frog jump. Can you help? I always get beaten up by the bullies at West Frumpton.

Z Taylor, Australia

Answer: That's because you probably deserve it. But seriously, this is what you need to do on day three: Go to the tree house and talk to Perry. Get the jar of fire ants and then go to east Frumpton. Go to the pier and give the token to Gus. Next, go to Tootsweet. Knock on the window. Go to the pier, then the olde towne and the sludge works. Talk to the plumber. Go to union and enter the building. Go to the tavern (until the gang turns up) and throw the smoke bomb at them. Use the wrench on the fire hydrant. Go back to Tootsweet and talk to the oriental. Go home.

QED Guides

How many more times do we have to tell you people? Some of you are STILL sending in requests for QED Guides. STOP IT! We stopped doing them a year ago and we don't want to see any more in our QED postbag! If you need help on a game either call the help line provided by that game's manufacturer, or address your queries to the Help Wanted section. Any more envelopes marked QED Guides will go straight in the bin. Got that?

Magic Carpet

Above and below: one of the most impressive things about Magic Carpet is the beautifully rendered graphics.

When you hear the mystical-sounding title of Bullfrog's latest potential money-spinner, you'd be forgiven for assuming that such a cutesy title would result in a cutesy, platformy type game. But there again, we're talking Bullfrog here, and if there's one thing these guys strive for, it's daring to be different. Sure enough, they haven't let us down because Magic Carpet involves killing. Lots of killing, in a variety of ingenious ways. In fact, it's a shoot 'em up from hell with a bit of strategy and pure old-fashioned magic thrown in for good measure.

Aiming for a Christmas release, the concept for Magic Carpet was first born in March 1993, when Bullfrog engine designer, Glenn Corpes loaded up a new flight sim in the Surrey offices and found that he couldn't work out how the 3D on it ran so fast.

Having a bit of time on his hands after finishing his last project, he tried a bit of coding jiggery-pokery and, after much work, came up with an all-new 3D system, which was unfortunately greeted with a chorus of "That's crap!" when shown to the Powers-That-Be at the regular Friday afternoon meeting.

After a bit of a sulk and a re-think, Glenn went back to the drawing board and, this time, concentrated on using textured bitmaps on the polygon 3D landscape to ensure a more realistic landscape, without having too much complexity on-screen.

The "guvnors" were impressed with the new version and, after much collective brainstorming involving the whole of Bullfrog's personnel (and no doubt a few jars of the Old Tub Thumber into the bargain), the idea of a game based on a Magic Carpet was decided upon (after a minor minion was summarily shot at dawn for suggesting something as mundane as a flight sim). The creative wheels were set in motion, with Finn McGeechie and Paul McLaughlin in the art department immediately starting work on some outline ideas and sprites and musician Russell Shaw charged to come up with some atmospheric tunes to go with the action.

Many, many months of blood, sweat and tears down the line, they now have an almost finished product on their hands with a Pentium version (super fast, super hi-res, realtime reflections) and a Virtual Reality helmet-compatible version well on the way. A multi-player option is also now in place — which means you can have as many participants as you like (although memory gets a bit tight when you get around the 100 mark).

Now that's magic

Mana, magic and mayhem is the order of the day with you as a be-turbanned individual flying high in the sky on your high-quality piece of floor-covering. As already mentioned, inflicting death is what it's all about, in — unusually for Bullfrog who tend to go for the isometric play angle — a glorious 3D environment.

Until fast PCs came along, things like texture-mapping and Gouraud-shading weren't really feasible, but now they have and it is, with Magic Carpet making the most of these techniques.

You soar through the skies through the likes of steam and mist, over grassy slopes, animated water, majestic trees and intri-

cate buildings, taking in those little touches like translucency, circular and spherical texture mapping, shadows changing with the light and tides affected by the moon, while all the time the music adjusts itself according to your state of play is.

You can even mess around with the display resolution to suit the speed of your machine if you like, from 320 by 200 pixels with 256 colours through 640 by 480 pixels with 256 colours right up to 1,280 by 800 pixels in 256 colours (although, be warned, this will be too slow for the 486).

Mana from heaven

One of the main aims of the game is to collect a substance called mana (shades of Populous, here), a residue left by dead beings which can be found at various points during the game in the form of golden balls, conveniently floating around in mid-air. Once collected, the mana-power can be transported back to your home base and used to boost your standing in the community (ie building bigger and better territories and generally dominating as much of the map as is possible).

Mana also means spells and there's a jolly array of these death-inflictors (or life-savers in some cases) to choose from, including fearsome fireballs, which cast dozens of flaming spheres over great distances; 'heal', which is the hard man's game equivalent to 'mummy kiss it better and put a plaster on it' when you've taken a fair number of hits; shield, which has a fairly self-explanatory effect; rebound, which does unto others what they've just done to you; volcano, which, funnily enough raises up great spurts of fire for the duration of the level and causes obscene amounts of grief to anyone in the vicinity. Put this together with the likes of meteor, possession, steal mana, summon fire, beyond sight, lightning, speed-up, rubber band stun, cloud of darkness and raise undead — to name but a few — and you'll see that Bullfrog has very cleverly honed ruthless murder down to an art form.

Mommy, I'm scared!

Naturally, a mythical game such as Magic Carpet — for which the art department apparently drew inspiration from a mixture of films of this ilk including Arabian Knights, Sinbad and Jason and the Argonauts — has to have monsters, lots of monsters. And Bullfrog hasn't let us down in this department either.

All the monsters were mannequins which the art team rendered on 3D Studio and then tampered with in free-hand to give a more realistic effect (although anyone who can claim to have seen a 'real' dragon or any of the other numerous mythological beasts such as gryphons, krakens and other sea monsters, is either a liar or on drugs)!

Other features guaranteed to put a spanner in your works are the freak weather conditions including whirlwinds, lightning storms and thunder bolts. Magic Carpet is certainly looking hot. Full review coming soon.

■ **Lucy Hickman**

FACTBOX

MAGIC CARPET	
Developer:	Bullfrog
Publisher:	Electronic Arts
Release date:	December '94
Genre:	Shoot 'em up
Minimum PC:	£TBA

Coming Soon

Alone in the Dark 3
Infogrames
The final episode in the Alone trilogy takes place on the set of a western — but unknown to anyone, the set has been built on a Navajo Indian burial ground, and strange things begin to occur. The latest incarnation of this popular game is due out on CD in November with a floppy version to follow.

Bazooka Sue
Krisalis
Inspired by 1950s B-movies, Bazooka Sue is a comic adventure, very similar in style to Day of the Tentacle. Sue, who just happens to be the world's sexiest pig, is out seeking fame and fortune when she has the bad luck to check into the sinister Bruth Motel... due next summer.

CyberJudas
Empire
The sequel to Shadow President is set in the future, where you, President of the United States, control the country's affairs via cyberspace. But there is a traitor amongst your presidential advisers — and it is your job as hero of the game, to find him before it's too late. Available this autumn on CD.

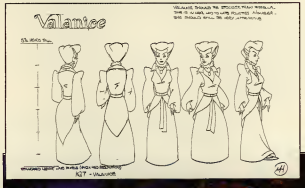
Cyclemania
Accolade
Decent arcade racing games are a rarity on the PC, but the adrenaline-inducing Cyclemania should satisfy your need for speed. Full-motion video brings the thrills and spills of the race track game to life, and it will run on a 386. Due out this month.

King's Quest VII and Phantasmagoria

Around 100 animators, some of whom have worked for Disney, were drafted in to create King's Quest's many characters.

Back in 1980 when writing computer games was something of a cottage industry, Roberta Williams created her first computer game on a 48K Apple II which she had set up on her kitchen table. That game — it was called Mystery House — did well enough to inspire her to set up her own games company with husband Ken, and 14 years down the line, that company, Sierra, has grown into a games industry giant.

Roberta, whose games include the phenomenally successful King's Quest series and the two Laura Bow games, still conceives all her game ideas and storylines at home, but the games themselves have long outgrown the kitchen table. Her two forthcoming releases, King's Quest VII and Phantasmagoria, each cost over $2 million to produce, and are not the sort of games you could knock up at home. King's Quest VII: The Prince-less Bride differs from the previous game in the series because it has been animated in a totally different way, with around 100 cartoon animators being brought in to give it that Disney-style look. It's an impressive game to look at, and also manages to include plenty in the way of gameplay. It will include 20 to 30 unique characters, including Rosella, a heroine of previous King's Quests, and her mother Valanice.



The story starts with Valanice lecturing her daughter on the merits of getting married, and although Valanice thinks Rosella is ready for nuptials, Rosella is less than keen. As they sit talking by a pool, Rosella notices a magical door in the depths. The door appears to open, showing visions of Fairyland, and unable to resist, she jumps into the pool and disappears. Valanice follows. Unfortunately, each woman ends up in a different place, and by belping them through different adventures, you have to reunite the two. And will Rosella find someone worthy of her affection? King's Quest VII has two possible endings, one happy and one sad, so that will be largely up to you.

The King's Quest games aren't everyone's cup of tea; some people find them too cutesy for their own tastes. The Prince-less Bride, however, seems to get away with it because it has adopted a visual style which complements the story perfectly. The drawback is that, with all that fantastic animation, plus a great soundtrack to boot, you're going to need some pretty hefty hardware to do it any justice. Needless to say it's CD only, and comes on two of those lovely shiny discs.

Gothic horror

Phantasmagoria is even hungrier when it comes to hardware, and comes on four CDs. However, it couldn't be more different when it comes to game style. When I say that it will probably be the scariest game you've ever played, I'm not kidding. A gothic horror, Phantasmagoria is about as close as you'll get to having a horror film on your PC. It combines digitised film with lavish rendered backgrounds, plus copious amounts of gore courtesy of a special effects team which Sierra brought in from the movie industry.

Some parts of the game are very disturbing: heads are split in half, people are

FAXBOX

PHANTASMAGORIA	
Developer:	Sierra
Publisher:	Sierra
Release date:	January
Genre:	Adventure
Minimum PC:	ETBA

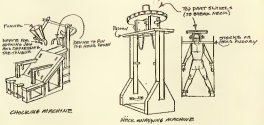
A team of Russian graphic artists were brought in to design the locations in Phantasmagoria, which have all been rendered using silicon graphics and are not for the squeamish.

set on fire and in one dream sequence, the heroine is strapped into a torture chair and force-fed her own intestines. Lovely. One wonders how on earth such a game could come from the mind of the same woman who brought us King's Quest.

Roberta Williams got the idea for the game two years ago, so it isn't an attempt to jump on the horror bandwagon started by Alone in the Dark and continued by others. The story is complex and imaginative, and begins with a young married couple moving into the wonderful, but suspiciously cheap, home of their dreams. When the 28-year-old heroine, Adrienne, starts having horrific nightmares, she realises that the house may have something to hide. She discovers that it was once inhabited by a sinister illusionist, whose five wives all died in suspicious circumstances. To make matters worse, her husband starts exhibiting signs of madness, and Adrienne must unravel the house's mysteries if she is to have a chance of coming out of it alive.

Phantasmagoria must surely be one of the most ambitious games of all time. Its 400 page script is the equivalent to four 90 minute movies, and with 20 hours of video, 20 live actors and 500 camera angles, it's no wonder that it cost so much to make. Phantasmagoria and King's Quest VII look to be two of the most revolutionary games ever created. Coming to a PC near you this January. Probably.

■ **Cal Jones**



FAXBOX

KING'S QUEST VII	
Developer:	Sierra
Publisher:	Sierra
Release date:	January
Genre:	Adventure
Minimum PC:	£TBA

Coming Soon

Jump
Ion/BMG
There's evidently still some life yet in David Bowie, as he joins FKA Prince on the interactive bandwagon. Jump contains the Jump They Say MTV video, and lets you edit, then remix Bowie tunes in record producer fashion. Out this month.

Lemmings 3
Psygnosis
The Lemmings are a bit bigger, the screens scroll in all four directions, the puzzles are even more lateral and each screen has its own lemming specialists. Apart from that it's more and more of the same and do I hear anyone complaining? I thought not.

I Have No Mouth and I Must Scream
Cyberdreams
This spooky adventure is based on the short story of the same name by Harlan Ellison, based on survival in a world where mankind is all but extinct and life is controlled by a super-computer. Due out in September 1995.

Novastorm
Psygnosis
The follow-up to Microcosm has some immediate advantages over its predecessor - like interaction, for a start. The Silicon Graphics' rendered backgrounds are stunning, the action is frenzied and the sound is deafening. You are in the space fighter Scavenger 4 (as the game was being called until recently) and your mission is to track down and destroy the military computer Scarab. Out by Christmas.

Ecstatica

Ecstatica is an adult horror story with gore, several chills down the spine and a distinct look of Alone in the Dark with curves. These curves are produced by using solid ellipses for the background graphics and the characters. This gives them an exaggerated roundness and enables each segment of each character to be animated separately.

The designer and main programmer behind Ecstatica is Andrew Spencer, whose CV would hardly lead you to think he would be getting involved with werewolves and exorcism — his previous game was the Commodore 64 cartridge International Soccer.

He's been working on Ecstatica for five years, although the parallels with Alone in the Dark — which Andrew much admires — are obvious. He has more recently been joined by French animator Alain Maindron, who also contributed a lot to the plot development.

The story of Ecstatica runs that you, the main character, arrive at the village as a traveller looking for water — but you quickly discover that sinister forces are at work in this superficially rural idyll. You find strange creatures, bodies hanging by the roadside, and the like. A young girl has been experimenting with black magic and a demon has taken possession of her body — the whole village has been terrorised as a result. The graphics are quite explicit, so don't expect a cosy romp through the countryside, as you dispatch demons along the way.

You need to find out what has happened and finally to confront the demon itself, with a neat twist at the end which it really would be iniquitous to reveal here.

The gameplay is a mix of puzzle-solving and fighting. The characters move beautifully, and, in a particularly pleasing touch, don't just stand stock still when they're not walking somewhere — they have a series of 'tum-ti-tum' type moves as they wait for your command.

The background graphics are very bright and colourful and drawn according to a painstaking technique where every blade of grass and every leaf is animated as a separate elipse.

You'll explore over 250 locations in total, set in and around the village, including the nearby woods and the dungeons below the castle.

Ecstatica is planned as a CD-ROM release, but Psygnosis hasn't yet ruled out the possibility of bringing out an abridged disk version later on.

■ **Christina Erskine**

Above, left and below right: Moving around the village in Ecstatica reveals numerous horrors.

TAXBOX

ECSTATICA

Developers:	Andrew Spencer, Alain Maindron
Publisher:	Psygnosis
Release date:	Late November
Genre:	Graphic adventure

Victoriana

With Presumed Guilty, the sequel to Innocent Until Caught, nearing completion, PC developer Divide by Zero is also working on its third game to be published by Psygnosis. Victoriana is something of a departure for the Islington-based development house, with outside "name" artists being drafted in to work on the background art and graphic design.

The characters have been designed and drawn by Alastair Graham, author of the illustrated books Full Moon Soup and Full Moon Afloat and whose latest credits include work with Disney on The Legend Of Fa Mulan, an animated film due to be released in a couple of years time.

The hand-drawn backgrounds are by Sue Tong, who also worked on The Thief And The Cobbler and most recently the animated version of Beatrix Potter's The Tailor Of Gloucester.

Victoriana is something of a skit on the type of inventions and voyages described in the novels of Jules Verne. The plot follows the exploits of good guy Piers Featherstonehaugh as he tries to foil an evil Professor from taking over the world with the results of the first ever genetically engineered animal experiments.

You as Piers, must travel around the world (and beyond) to track down and defeat the Professor, whilst protecting his feisty betrothed, Mirabella, from the unwanted advances of the rascally Kingpeace, a smooth operator who would like nothing better than to see Piers come unstuck.

With only his faithful manservant, Mossop, and a stiff upper lip, Piers sets out on his voyage of discovery.

The adventure spans more than 100 locations, including Victorian London (reproduced from maps of the period), an island near the top of the world, the lost world of Atlantis, the moon, the centre of the Earth, a steamship, a sailing ship, tropical islands and the secret undersea base of a sociopathic submariner who travels under (rather than on) the sea in a ship called the Naughtiness.

Thus Victoriana keeps its tongue firmly in its cheek. Divide by Zero plans to have this one finished next spring: it will be on CD-ROM only, in SVGA, and have full speech throughout.

■ **Christina Erskine**

FACTBOX

VICTORIANA

Developer:	Divide By Zero
Publisher:	Psygnosis
Release date:	Spring 1995
Genre:	Graphic adventure
Minimum PC:	ETBA

Coming Soon

Old Timer
Maxx Design
An unusual combination of strategy, racing and reference, this game sets you as an early 20th century car designer, charged with building the ultimate designer car. So far, so Sim Merc.
We wait with baited breath.

Retribution
Gremlin
It's Earth versus the aliens again in this fast-paced, 3D combat action game. Over 50 missions, different terrain types and vehicles and artwork supplied by 2000 AD artist and Judge Dredd movie consultant Kev Walker. Out November priced at £39.99.

Sim Rainforest
Intelligent Games/Maxis
A well-rounded game based on maintaining a profitable economy in the jungle without turning the place into an industrial desert. Has all the Maxis strategic hallmarks and ecological concern coupled with Intelligent's Matthew Stibbe's love of authentic statistics and characterisation .

Slipstream
Gremlin
More action from Gremlin, this time in the shape of a futuristic racing game which features some of the weirdest vehicles you've ever seen taking to a race-track. Very fast, very furious and lots of fun. Due to be released on both CD and floppy in December, priced at £39.99.

GAMES

PC REVIEW Recommended

We don't give PC Review Recommended awards to many games, but you can be assured that those that do get this accolade will be, in our opinion, outstanding in all areas. A PC Review Recommended award is a guarantee of excellence.

The Recommended scheme

Not only do you have the advantage of knowing that Recommended games are currently the best in their class, but we give you the chance to win a copy of each PC Review Recommended title. We have five copies of each newly Recommended game to give away to the winners of this competition.

How to Enter

If you'd like to win a copy of Chessmaster 4000 Turbo on CD-ROM, this month's Recommended game, simply answer the questions printed on the entry coupon and send your entry on the back of a postcard or sealed envelope to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

The closing date is November 10, 1994, and any entries received after this date won't be eligible for the draw. The winners will be the first five correct entries drawn at random after the closing date.

All normal competition rules apply — particularly the one about not sending in multiple entries.

WIN CHESSMASTER 4000 TURBO CD

Answer the questions below and send this form (or a photocopy if you don't want to spoil the magazine) to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU, to reach us by November 10, 1994, and your entry will be placed in the prize draw.

Q: How many squares on a chessboard? (you don't have to start counting composite squares)

A: .....

Name .....

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❑ Tick this box if you do not wish to receive further information from companies associated with this competition.

THE PC REVIEW PLAYLIST

We've ranted about a fair number of games this month, and raved about a very select few. But what are the titles currently taking pride of place on our hard drives, and keeping us at work late into the evenings?

Christina Erskine

Ersk's been surfing with the best of them in this month's Internet special. In between riding the waves of cyberspace, she's found time to establish a couple of world speed records at puzzle game Elimination, and also admits to having watched the amputation scene in Stowaway!, Dorling Kindersley's wonderful new CD, at least five times.

John Bennett

To the immortal words of 'Don't worry, it shouldn't need too much play testing ...', John disappeared off to a dark room with his pet chainsaw, a burger, the best Pentium in the office and the all-important set of Doom 2 disks.

We got the review, (it's over on page 50) but we haven't seen hide nor hair of John since.

Cal Jones

Cal's torn into the games with a vengeance this month. System Shock, Master of Magic (Civilization with spells, as she put it) and tips for Superhero League of Hoboken have kept her busy for a while. Little Big Adventure had her really impressed (page 40). She also found time to put up the sort of multi-player Doom 2 performances that defy belief ...

Simon Shaw

Part-time strategy games expert and full time crime fiction writer Simon was bemused and engrossed in equal parts by Neo Software's The Clue (page 76). A diehard Sid Meier fan, Simon is currently preparing Colonization tips for the next issue and arguing with John over who's going to write the Transport Tycoon review.

REVIEWED THIS ISSUE

ON DISK

Doom 2	**Virgin/ID**	**7**
System Shock	**EA**	**7**
Master of Magic	**MicroProse**	**7**
Eliminator	**Libre**	**7**
FST Midway Wing Commander	**Domark**	**5**
Armada	**Origin/EA**	**6**
The Clue	**Neo Software**	**7**
Fritz	**Playtime**	**8**
Countdown	**Lockton Software**	**4**

ON CD-ROM

Subwar 2020	**MicroProse**	**7**
Titan's Legacy	**BlueByte**	**8**
Wrath of the Gods	**Maxis**	**6**
Chessmaster 4000 Turbo	**Software Toolworks**	**9**
Betrayal at Krondor	**Sierra**	**6**
Falcon Gold	**MicroProse**	**8**

PC REVIEW RECOMMENDS

THE BEST OF THE LAST THREE MONTHS

Colonization
MicroProse, £44.99
The follow-up to a Sid Meier all-time classic (Civilization), proves yet again that you don't need fancy graphics to make a great game. Starting from the 17th century, it's all about the discovery and colonisation of the New World.

Theme Park
Electronic Arts, £44.99
Theme Park puts you in charge of your own fun fair. Cute and superbly addictive, it covers just about everything from building rides, to settling pay disputes, wheeling and dealing, and ejecting vandals.

1942: Pacific Air War
MicroProse, £44.99
Arguably the most comprehensive World War Two flight sim around, Pacific Air War features Gouraud-shaded aircraft, a virtual cockpit and a campaign option that allows you to control the movement of your aircraft carriers and to plan your own air strikes.

CIARÁN'S RANT

For this month's rant, I'd like to add my tuppence worth to the 'interactive movie' debate which is currently doing the rounds in the letters pages of most good PC magazines.

According to many of the letters which manage to sneak through the Post Office's otherwise impressive barrier around the PC Review office, the PC's equivalent of 'the man on the Clapham Omnibus' is currently getting all hot under the collar about the current fashion for producing interactive movies.

In short, it would seem that the main problem attached to these creations is that they are, by their very nature, too linear (and therefore far too easy) for the experienced gamer to enjoy playing.

And before I leap to their defence, I should add the disclaimer that there's probably some truth in this argument — after all, the twin constraints of data storage and actors' fees combine to reduce the amount of 'paths' which can be shoe-horned into one of these packages. Linear gameplay, therefore, is practically unavoidable.

But then, why must people who write letters to magazines always be so quick to look for the negative side of things? My own feeling is that interactive movies are rather good things — there are many reasons for thinking this and here are just a few of mine...

My first point, and it's a quite a simple one, is that most interactive movies are quite good fun.

OK, so they're not going to tax your grey matter for too long, but the human element of games that feature scripts, sets and actors mean that they usually provide a good many more laughs than much of our traditional computer fare.

My second reason is that interactive movies usually show off your hard-earned hardware to a much greater degree than other games — with an interactive movie you can show your loved ones exactly why they had to spend their holidays at home while you upgraded to a high specification, high end, CD-equipped Pentium.

And finally, my most important argument of all is that the arrival of interactive movies will most probably be the event which finally takes the art of PC gaming out of the realm of nerdy hobbyist entertainment and into the mainstream. This, I would argue, would be quite a good thing.

Sure, your average interactive movie may not be as compelling as, say, Ultima VIII, but the major drawback of that particular classic (and, indeed, most of the traditional computer entertainment which we have come to know and love) is that you need to be able to play computer games first in order to be able to enjoy and play the game.

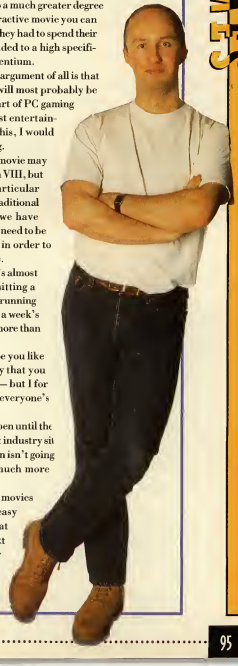
This may sound like a point that's almost too obvious to mention, but try sitting a complete beginner in front of a PC running any RPG or strategy game without a week's instruction and you'll be met with more than a few blank stares.

I don't know about you — maybe you like the fact that PC gaming is a hobby that you share with very few other people — but I for one would like to see the day when everyone's playing PC games.

Of course, this isn't likely to happen until the major players in the entertainment industry sit up and take notice, and that in turn isn't going to happen until games become much more accessible to everybody.

So there you have it, interactive movies are a good thing because they're easy — it's as simple as that. All that remains for me to say is see you next month... and hopefully at the other end of the magazine.

■ **Ciarán Brennan**



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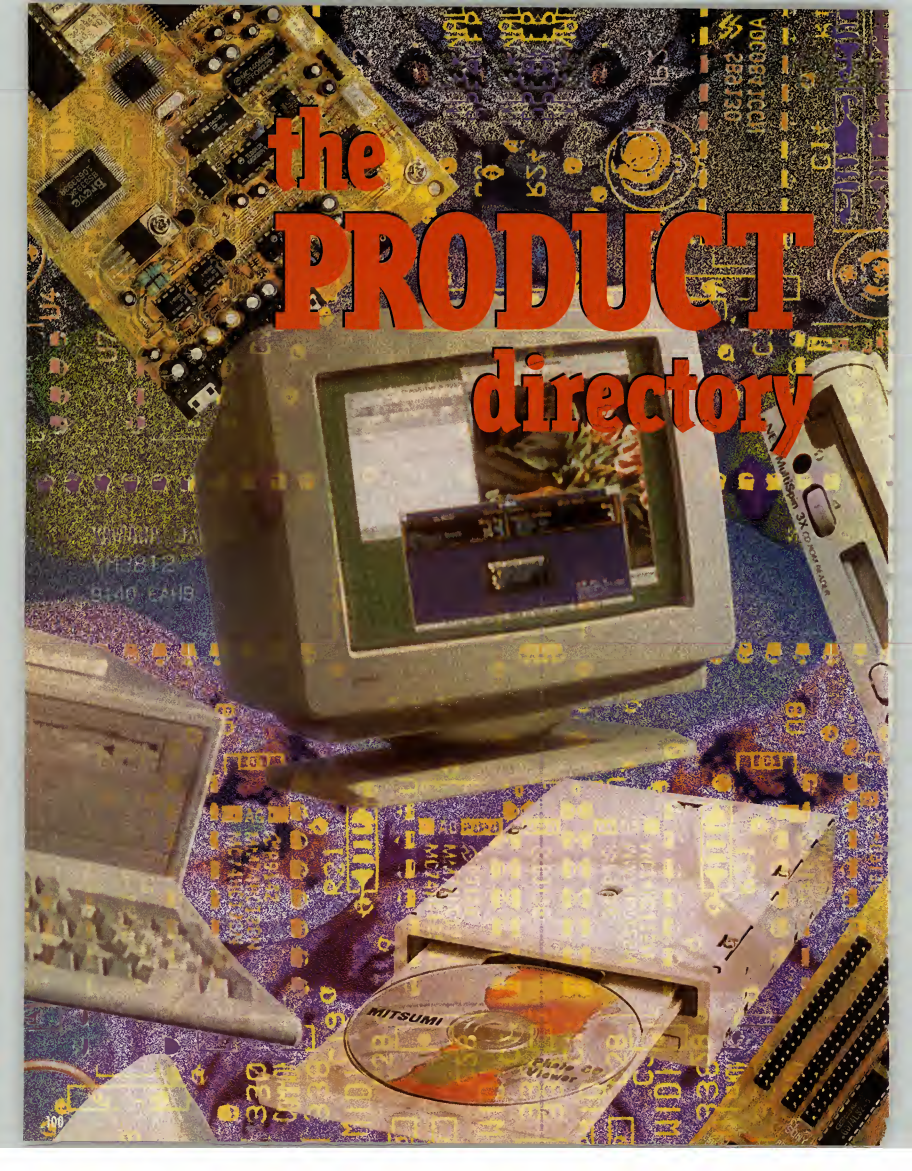
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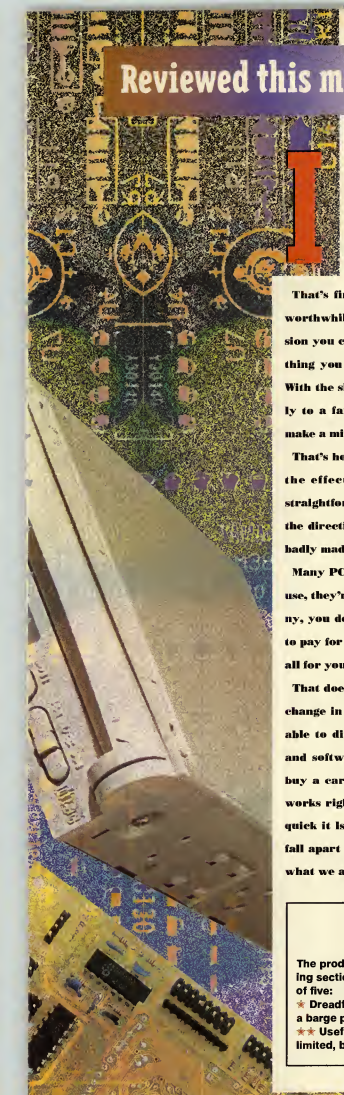

Reviewed this month PRODUCTS

It may not be on the scale of a house or a new car, but the home PC makes a sizeable dent in any wallet. However, the sheer enjoyment and convenience of the PC is enough to justify the initial outlay, and the extra hardware and software you suddenly find you just have to have.

That's fine. Nobody minds spending money on something worthwhile. On the other hand, if you make the wrong decision you could end up throwing good money away on something you don't want, don't need and certainly won't like. With the sheer number of PC products arriving daily, usually to a fanfare of technical gibberish, it's all too easy to make a mistake.

That's how this section is going to help you — summarising the effectiveness of new PC products in a direct and straightforward way, free of jargon. This will point you in the direction of that essential gadget, and warn you off the badly made, the unsuitable and the ill-conceived.

Many PC products are just not designed for you and me to use, they're still aimed at companies and offices. In a company, you don't chose what sits on your desk, you don't have to pay for it, or fix it when it goes wrong. A specialist does it all for you.

That doesn't happen at home. So, until there's a wholesale change in the type of equipment we're sold, you need to be able to distinguish what is important about PC hardware and software, and what is just marketing guff. When you buy a car you don't need to know how a 16-valve engine works right down to the last rivet. You need to know how quick it is, how well it performs and whether it's likely to fall apart on you. The same is true with the PC, and that is what we aim to provide in these pages.

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The rating system explained

The products in the following section are marked out of five:

★ Dreadful. Don't touch with a barge pole.

★★ Usefulness is probably limited, but could be suitable for specific need.

★★★ Generally good; some limitations

★★★★ Good. Should go on anyone's shortlist to buy

★★★★★ Superb, either outperforming or offering features that other products can't do.

Ease of use, ease of install-ation, value for money and sheer performance are the most important factors we take into consideration.

Product directory

PRODUCTS

Plug in, call up and meet the world ... in what is being called the year of the Internet, Martin Klimes surveys the best value fast modems you can buy.

The need for speed

The computer scene is abuzz with talk of downloading, BBSs, and the glories of the Infobahn. But is it for real, or is it just one big comm?

Unfortunately, the only way to really find out whether all this global hooking-up of computers is of any use to you is to really get out there and explore a bit. For that you'll need a modem, and there are plenty of classy performers waiting to do the job for you, as well as a fair share of high-priced and outdated hardware. Here we look at five of the most popular modems that share two characteristics: up to date technology, and an affordable price.

Sportster 14,400 FaxModem
Supplier: First Computer Centre
Contact: (0532) 319444
Price: £119

The Sportster is a very popular model, as indeed it should be given that it offers the speed of many more expensive models.

But you lose out on packaging, for sure. The egg-carton box may worry you about the quality of what's inside, and the 1970s styling on the actual equipment, complete with purple writing, is hardly a modern design statement.

However, let's face it, the box it comes in isn't half as important as the electronics itself, and the Sportster is just as good inside as any of the others. It's a full v32bis modem with v42bis com-

No frills, but not a slacker either.

As for the software that comes with it, to be honest manufacturer US Robotics changes the bundle so often that if you give the supplier a call with a preference for one package over another they'll probably get it for you. The installation guide to the modem itself is good, with photos showing step by step how to install the hardware and full details of all the switch combinations available.

One thing that you're unlikely to get with the Sportster is a cable, so expect to shell out another tenner for that on top. Other than that, as a value option, it's not bad at all.

The Supra is very similar, so if you want your flashing lights to come off a metal rather than a plastic box, then by all means look for that. Functionally, they're very similar.

★★★★

Zoom 14.4X FaxModem

Supplier: Electronic Frontier
Contact: (0732) 810600
Price: £169

It looks a killer and it acts a killer. The Zoom may not have the pedigree of a big name like US Robotics behind it, but in every way this modem offers a fair crack of the communications whip. As an external model it's a sleek box of tricks, easily portable and fully cabled at the price. The internal version comes for £10 less, presumably because you won't need a separate power supply.

What you get, as far a performance is concerned, is the v32bis send and receive rate of the others, the same v42bis compression, and fax capabilities. These are both class 1 and 2, which gives you the extra widget factor over and above something like the Sportster. Whether or not you'd use the functions of class 2 is a point to consider, since you're paying extra for it.

As far as ease of use and installation, the Zoom is easy to understand on the hardware side, but is less impressive on the software. Inside the box you'll find bundled a copy of the excellent WinFax Lite, but WinNet (introductory software for the Internet) came with one page of photocopied instructions, a fact that certainly didn't enamour me of it. As for COMit, the standard communications package, there were no instructions whatsoever. Perhaps just an oversight by the person on the production line that put together my package? If so, then what else might they have missed — the circuit board inside?

Quality control aside, I didn't feel it necessary to part with the extra it, and it behaved itself well, but no better than the cheaper players in the market. As for the software instructions, the less said the better.

★★★

Dataflex Super Gem

Supplier: Dataflex
Contact: (0181) 543 6417
Price: £299.99

Although we looked at the internal version of the Super Gem, to see how internals run compared to their external counterparts, there is an external version available at no extra cost. With it inside your machine you don't waste desk space, but then neither do you get to see pretty flashing lights, that's all.

The internal version comes in a plastic cartridge-style casing that stops you knocking any components off the board as you handle the card — something I think should be standard on all cards.

It offers seamless performance, slick installation, and some good software — such as TransSend Lite. As with the Zoom it's a v32bis modem with v42bis compression and class 1 and 2 fax capabilities. You also get a month's introductory subscription to CompuServe to get you started.

The Super Gem didn't give me a single glitch when running. No hardware conflicts or software trouble. No connection hassles or corrupted data to speak of. Sure, it's hardly the bargain of the century, but it's a nice little runner just the same.

★★★

Supra FaxModem

Supplier: First Computer Centre
Contact: (0532) 319444
Price: £121

The Supra FaxModem is a small, tinny box of the sort that particularly fails to inspire confidence when you open the lid.

The plastic power knob looks like it came straight out of Tandy, and the whole front panel lacks any suave styling. What it doesn't have in this category, though, it makes up for in other areas.

The spec is similar to the Sportster above, and the same story goes for the software — you can get any of your personal favourites thrown in, if you ask nicely.

The price includes cable, adapter, and good manuals. What a relief!

TECH TALK

So it's a 14,400 bps system with Class 1 rating — that's to say it's a v32bis system. Got it? OK, OK ... here's the low-down on the high brow language of the comms-literate snobs:

Not so long ago the most common modems were those that shifted data at 2,400 bits per second (bps), eight bits roughly corresponding to one character. This is called a v22bis modem. If you want to wait for an hour or so for a file to download then that's what you're getting with this standard — think of the phone bills. A v32bis modem (see below) will transfer a megabyte of data in about 10 minutes, while at v22bis you'll be on-line for six times as long.

Alternatively there are other rates of transfer (otherwise known as baud rates) on offer nowadays at thoroughly reasonable prices.

Most likely combinations are 9,600bps (v32) or 14,400bps (v32bis). Soon expect v34 to be more popular as a new standard (called informally V.Fast) which will shift data at 28,800bps. This is pretty stunning when considered next to the 300bps rates at which the earliest modems functioned! Currently only US Robotics have a generally available v34 modem, for £365 plus VAT.

The baud rate is one thing, but if you can compress the data that you're sending down the phone line then you can get it across in a fraction of the time. v42bis compression is the one to look for, since it can turn a 14,400bps system into an effective transfer rate of 57,600. Not that every bulletin board and on-line service will support such compression shenanigans. Some do, some don't.

Add to this the fax side of communications. There are two types of fax feature included in fax modems at the moment, called Class 1 & 2. Class 2 has more whistles and bells but will probably only be of use to the hardcore fax fiends among you. Unsurprisingly, the Class 2 rating will by and large also set you back substantially more money.

One thing to check for before buying a modem is BABT approval. Symbolised by a green circle, approved modems are legal to use while unapproved ones aren't. It's as simple as that. Be warned: yes, it's legal to sell modems without BABT approval, but it's the use of them that's against the law. So you could end up with a dodgy modem from a perfectly respectable looking shop. One wonders, though, who's checking these things. The Supra reviewed here isn't BABT approved and yet if you look on bulletin boards you'll see that it still appears to be popular.

With a Supra you may be up and running quickly without spending a lot. You can get flasher, faster, more reliable pieces of kit, but with this one you really do get what you pay for.

★★

When tested it seemed to hold up quite well, although calling a bulletin board in the US I did get some teething troubles on connection. It would be a bit unfair to point the finger at the modem alone, but I didn't get similar connection hassles with the others. You should also be warned that the Supra has no BABT approval—see the Tech Talk panel on the previous page.

Roadrunner Rocket
Supplier: Andest
Contact: (0628) 75577
Price: £249

One of the odd-looking brigade, the Roadrunner Rocket is a portable external fax modem shaped like an ice hockey puck with lights. On the box it comes billed as a 57,600 bps job, which is a bit naughty. What that actually means is it's a standard — admittedly quick — 14,400bps modem with v42bis and MNP5 data compression. The Group 2 fax runs at 9,600bps.

The biggest surprise of the day was the software. The old DOS-based Transend used to be one of my all-time nightmares. But the new Windows version was a revelation: I was able to set everything up in a matter of minutes and use the essential modem/fax features with a minimum of fuss (apart from the minor irritation that is the pulse dialling/tone dialling settings are not particularly well documented).

Still, it's also good to see that Andest's Roadrunner comes with a comprehensive set of cables and adapters, which are usually rather scarce on portable modems. You don't even have to pay extra for the mains adapter.

All in all, the Roadrunner Rocket packs a powerful set of features in a neat, usable package, but the price tag may prove to be off-putting to many people.

★★★

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50 x	35.00	47.50	26.00	37.50	23.99	32.50
100 x	65.00	95.00	49.99	74.99	44.99	62.99
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DELL DIMENSION 450SI

486/50 SX2 PC

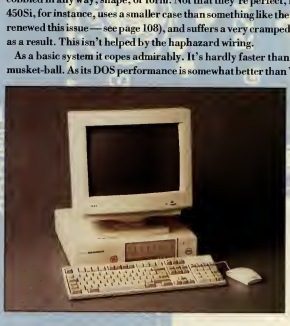
Supplier: Dell
Contact: (0344) 720000
Price: £899

The Dell 450Si uses a 486/50 SX2 processor with 4Mb of memory and proprietary local bus graphics. It comes with a 260Mb hard disk and a Super VGA monitor.

If the popularity of certain brands of PC were based solely on external aesthetics, then Dell would still be struggling to sell its first machine at the local car boot sale. Instead it's a big name manufacturer that shifts computers by the shed-load.

That's because the systems they put together are solidly made and not cobbled in any way, shape, or form. Not that they're perfect, mind. The 450Si, for instance, uses a smaller case than something like the MJN (also renewed this issue — see page 108), and suffers a very cramped feel inside as a result. This isn't helped by the haphazard wiring.

As a basic system it copes admirably. It's hardly faster than a speeding bullet, but is quicker than a lacklustre musket-ball. As its DOS performance is somewhat better than Windows, it'll hardly be a friend to Chicago, unless you seriously upgrade the memory. Still, at least the SIMMs are easy to get to. Out of the three PCs in this month's product directory, the Dell has the largest hard disk, which should soak up quite a few of todays space-guzzling programs — before bursting at the retaining bolts.



It may sound trivial, but the feature that made me wince most was the keyboard. Very heavy to the touch, I found it hard work. It should last years of even the worst battering by hordes of young children, but my guess is that you'll want to replace it well before then.

All in all then, I didn't have a major problems with the whole kit, but individual design elements made me less than keen.

Martin Klimes

★★

HARDWARE

Platinum Sound Pro PS-5000

PC amplifier and equalizer

If you want to get the best in the way of sound quality and balance from your speakers, you need an equalizer. Now, you can either do this by jacking your stereo system into your PC, or you could try the Platinum Sound Pro — a small internal equalizer and amplifier in one.

To be perfectly honest, it doesn't exactly look a million dollars. What can you do with something that's firmly entrenched in the physical 'knobs and sliders' world, when hi-fi has already progressed to soft-touch buttons, flashing lights and programmable displays? It reminds me more of the sort of thing you'd find in a Ford Escort than a quality home stereo job.

Still, the seven band equalizer does a fair job all round. The range isn't great, but with a bit of tinkering you can improve the sound balance you'd normally get out of your speakers quite dramatically. The built-in amplification adds some welcome extra 40 watt wallop (20 watts per channel) to games sound.

And while we're at it, it's also useful to have your master volume, fader and balance controls within easy reach on the front of your PC like this.

All in all, the Platinum Sound Pro isn't brilliantly finished (personally I'd be more tempted by a gadget like the Vivid 3D surround sound on page 108) but it's not pricey and does the job it's paid to do.

John Bennett

★★★

Supplier: Britpower
Contact: (081) 449 6565
Price: £82

Requires a minimum of a 386 PC and a free 3.5" drive bay, plus stereo speakers. Offers 40 watt RMS, seven channel equalizer.

Sony Multiscan 15SF

SVGA monitor

So you have your PC and it's a beauty. Runs like the wind, cutting through data at speeds you hardly thought possible. You have the double speed CD-ROM drive, and the 16-bit sound card, the huge hard disk and all the gubbins you figure you'll need for the multimedia world of the '90s. You're not short of a few bob, are you?

But what about the graphics side of things? No, not the graphics card. That's all well and good, but what about the monitor?

After all, a good sound card's no use without decent speakers, right? It's much the same with the visual side of things. All the 64-bit graphics accelerator cards in the world won't help if the final image zips its way up the cable at astonishing speeds to a low-grade box of 1970s cast-off bits and pieces.

The Sony 15SF uses Trinitron technology to offer a technical specification any graphics card would be proud to associate itself with. With 60Hz at the top resolution, it's not the best on offer, but is good enough to not flicker annoyingly — even faced with sets of horizontal lines (take any Windows screen, for example). At 1,024x768 or, even lower, at SVGA settings the performance is superb. A good fine dot pitch helps enormously.

This isn't a cheap monitor in anybody's book, but the quality stands out. The controls (buttons, not knobs) are responsive and sturdy, the whole frame is well constructed, and it's a tad smaller than many of its rivals, so it shouldn't take up as much desk space.

There's a lot of leeway in how manufacturers measure the size of monitors, but in absolute terms the Sony is one of the larger 15 inch screens around, an important point in itself. With a bit of careful consideration you may feel the 15SF would be a good investment for your system.

Martin Klimes

★★★

Supplier: Sony
Contact: (0932) 816000
Price: £395.00

The 15SF is a 15 inch multiscan monitor using Trinitron technology. It offers 0.25mm dot pitch and resolutions up to 1280x1024.

Kelvin 64

Graphics Accelerator Card

If your flight sims clunk along at sub-standard rates, your Doom's doomed to low-res, and your Windows open slower than a lock on the Manchester ship canal, then the Orchid Kelvin 64 is just the ticket for you.

With a Kelvin 64 fitted, the average TIE fighter moves round the screen at sizzling speeds. Compared to the average or even better-than-average graphics card you can visibly see the change. The 1Mb version is fast, but for the works try out the 2Mb card.

Faster than a cheetah with afterburners, the Kelvin 64 is offering a performance only matched by products more than twice its price. Whether it's CAD, DTP, video or good old- fashioned games this little wonder from Orchid will turn your graphics slow-coach into a speeding bullet train. Test drive one today.

Martin Klimes

★★★★★

Supplier: Orchid
Contact: (0256) 479898
Price: 1Mb £149, 2Mb £199

Available in two configurations, either 1Mb or 2Mb of DRAM, you can have the card for Local Bus, PCI or a standard ISA machine.

Compaq Presario 660

486/33 PC

Tight, tidy and well made. That's the first and the lasting impression this PC gives. Particularly the compact feel. Even the monitor is somewhat smaller than with the others being tested.

Unfortunately, this leads to the usual problems for people trying to upgrade. Once you whip off the easy to remove (but difficult to get back on properly) lid, you're faced with a scene that'll plague your computer nightmares from that day on.

There are only three expansion slots, placed vertically for difficulty of access, and too many loose wires and cables for its own good. The spare drive bay is under the floppy drive, making it particularly tough to get at. It's not a disaster by any stretch of the imagination, but getting in your new multimedia upgrade could be a whole heap easier.

And just because it's sleek of design doesn't necessarily mean that it's sleek in performance. But rest assured, this is no sheep in wolf's clothing. The Presario gave a fine showing in both DOS and Windows. The 8Mb of RAM on board does help, of course.

In the end you have to figure out what you want from a computer. Compaq has put a decent processor, hard disk, and a good amount of memory into one of its traditionally well-built PCs. Expansion-wise, it's a bit of an accident waiting to happen.

Martin Klimes

★★★

Supplier: Compaq
Contact: (081) 332 3888
Price: £1,025

Under the lid you get a 486/33 Local bus PC with 8Mb of RAM, a 212Mb hard disk, 14" SVGA monitor, and bundled software including, as well

Super Warrior

Joystick

It's new, it's smooth and best of all, it's rubber-coated. Yes, it's the Super Warrior flight-sim joystick, guaranteed not to slip when the pressure's on and your palms get that little bit sweaty. Never again will the dastardly enemy fighters break your targeting lock, because your hands couldn't keep a firm grip of your stick. And with on-board throttle and four fire buttons most options should be at your fingertips when you're manning your favourite sim.

That's the good news.

The bad news is that the main fire button's buried a few millimetres back inside the sbaft, making it a fight with the plastic to release that vital bomb-load. Also, the front two buttons aren't too handy unless you're holding the joystick in both hand — uncomfortable after a while. And, worst of all, the stick's a complete pig to get moving fluidly in a diagonal direction. You want to go in one of the four cardinal directions, no worries. Diagonals, though, are a distinct no-no.

The Super Warrior claims to be from the Lethal Series, and I found it lethal to me as I struggled, nay, wrestled, with the controls.

Still, my grip didn't slip once.

Martin Klimes

★★

Supplier: QuickShot
Contact: (081) 365 1993
Price: £19.99

It's a four button joystick with throttle control for PC pilots everywhere. It hooks up to any standard games card or sound card joystick

Boston CCD-120

IDE CD-ROM drive

The Boston CCD-120 is the second of the new breed of IDE CD-ROM drives to hit the streets. The advantage of any IDE drive is less aggro all round: no IRQs and DMAs to plague you, no sound card compatibility problems, no need for an expansion card, and less wear and tear on your wallet.

Where the Boston drive differs from the Bluepoint ICD300, though is that it's an Enhanced (ATAPI) IDE drive. Not that that seems to make any difference, though. It's still compatible with standard IDE, and doesn't gain significantly from being hooked up to an enhanced IDE controller.

First impressions are excellent. It's a very well finished drive — in a way that easily belies the price. It's always a pleasure to come across PC hardware that's this easy to install, and the drive also has the added advantage of front panel audio CD controls, which is a nice touch.

Sadly, it's let down in the longer term by rather sluggish performance and a nasty habit for CDs to get caught in the drive because of the shallow tray mechanism (as I found to my cost with one of our cover-mount CD-ROM gold disc master copies). Still, for the price and the ease of use it warrants more than a passing glance.

John Bennett

★★★

Supplier: Boston
Contact: (081) 441 5562
Price: £109.99

Double speed Enhanced IDE MPC CD-ROM drive. Tray loading, with audio CD controls. CD engine manufactured by Wearnes.

CD-Repair system

CD-ROM repair kit

I approached this with complete scepticism, I bave to admit, largely because I have less than fond memories of dodgy video and cassette cleaners. How on earth could three pots of fluid and a cloth possibly repair some of my more knackered PCs?

But... it actually works. Honest to God.

The kit is good for up to 50 CDs, and works in three parts. First there's the cleaner fluid — whicb removes thumb prints, dust and so on. Then there's the optical repair fluid, which fills in scratches and marks on the disc, and finally there's the fluid whicb adds a protective glaze to the disc.

I don't quite know bow, but it turns out to be remarkably effective at clearing up glitches on CDs. The crowning moment was when one of my audio CDs which has always caught at the same scratch, and then burps its way through the next 30 seconds of music, ran through without a hiccup. Remarkable.

John Bennett

★★★★

Supplier: Bundee CD3
Contact: (0992) 584205
Price: £14.95

What can we say. It's a CD cleaning kit for cleaning CDs. Therefore, minimum requirement is one dirty compact disc, I guess ...

MJN 486 DX-66

486/66 PC

- **Supplier:** MJM
- **Contact:** (0282) 777555
- **Price:** £1,024

66MHz Local Bus 486DX2 PC. Comes with 4Mb of RAM as standard, 14" Super VGA monitor and a 250Mb hard disk drive.

At £799 (plus VAT) you'll think you're dreaming. A 486/66 machine decently bundled with a good bard disk, memory and software? Surely not?

But hold your horses a minute. Let's look at what you really get in the package, shall we? Firstly, the bits you'll see when you open the box. The PC itself is of decently solid build, but quite a large desktop box to put your monitor on. The monitor itself is a fair piece of equipment, but bas less than conveniently placed control knobs. The keyboard, on the other hand, is a good balance of easy responsiveness and durability.

Once you can get the easy-slide casing off, you'll find a fast processor is given only 4Mb of RAM, admittedly enough, at the moment, for the majority of applications, but less satisfying in light of the latest batch of CD-ROM releases and Windows applications. Not that response times are slow. A fast, if small, hard disk helps make the overall system feel quite nippy.

Expansibility-wise, if you want your computer to do more than the basics, then you have three slots to install new cards, easy to get at SIMMs for memory upgrades, and a single spare drive bay which is placed in good view at the top of the machine, but without a cage to attach the drive to. Not bad, but could easily be better.

On the software front, MJN packages the impressive Lotus suite with all its PCs, a good bonus for your money since it offers high quality word processing, organiser and of course spreadsheet capabilities to you.

With IBM know-how behind it, the MJN proves to be a decent value for money option.

Martin Klimes

★★★★

Vivid3D

Surround sound CD

The NuReality Vivid3D has all the ballmarks of the classic electronic black box: it's thoroughly unobtrusive, un-marked save for two simple selectors and a volume switch, and it hooks up so discreetly between your speakers and your PC sound card (or your hi-fi system for that matter) that you'd hardly know it was there.

Then what?

Then, it simply takes the sound coming out of your PC sound card, gives it a hefty boost and sends it on its way with the added bonus of stereo surround sound.

It works an absolute treat. Surround sound isn't as easy to pin down as, say, directional 3D sound, like the Advanced Gravis Ultra-Sound Max, but the overall effect is to fill out the sound considerably and give the impression that it's coming from all round you (well, no surprises there, really). But unlike the usual approach to surround sound, this black box doesn't need anything more than your average number of speakers (ie, two), or specially coded software.

True, you need to position the speakers carefully, and reasonably far apart to get the best effect.

But it's a superb add-on — really boosting the atmosphere of a game. And, it works even better on a quality hi-fi system, for that matter.

UK pricing is being worked out by the distributors right now, but the American price is under $150 dollars, so it shouldn't work out too costly over bere — probably somewbere around the £100 mark.

It even comes with all the cables you need and the vital mains adapter in — not as 'optional' extras.

John Bennett

★★★★

- **Supplier:** Leader Media Products
- **Contact:** (0992) 503 133
- **Price:** TBA

Comes with audio jacks for both PC sound card and hi-fi connections, requires two speakers, and ... well, that's all it needs.

Orchid SoundDrive 16

16-bit sound card

Orchid has done well so far with its excellent wavetable sound cards, and now it's having a stab at the budget 16-bit FM card market. Unfortunately, it's not a promising start.

Installation (through Windows only, by the way) is fiddly and takes far too long for my liking.

The card has no native mode, and as it doesn't emulate any other 16-bit cards you are usually forced to use the Sound Blaster Pro emulation — which works perfectly but it's only 8-bit . . .

On the CD front, the card is particularly limited. I couldn't play any of my CD games because the SoundDrive 16 has only a Mitsumi CD-ROM interface — not much good for my Panasonic drive (still, the SoundDrive can handle SCSI-2 CD-ROM drives, but only with the purchase of an extra chip).

The Windows applications bundled with the card are nothing to write home about, either: a speaking clock, calculator, timer and stopwatch, which are all very clever but hardly essential to life as we know it.

An alarm clock reminder that can play .WAV files is a little better. You can record your own messages using the basic sound recorder supplied, ie, "East Enders is on" and set the alarm for 8.00pm. I'm a sucker for gimmicks like this.

Then there's Quick Voice: not surprisingly it's a voice recognition package, but perhaps what is surprising is that it's pretty awful. I'd tell the computer to 'print' and it would 'end' or 'paste'. This could have been caused by the measly microphone supplied (which I breathed into and opened MS-Word) or just software that isn't up to the job.

The SoundDrive 16 price is undeniably cheap — that's its one redeeming feature. Sound Blaster 16 compatibility would have given the card an extra couple of marks, but without it, well, there are a lot of better cards on the market. An extra £60 will get you a better supported wave-table synthesis card that doesn't restrict you to the one make of CD-ROM drive.

Phil Kelly

★

- **Supplier:** Orchid
- **Contact:** (0256) 479898
- **Price:** £79

16-bit FM synthesis sound card, with Mitsumi CD-ROM drive interface. Optional upgrades to wavetable sound and SCSI CD-ROM compatibility.

24 Hour Video Assistant

Video help for Windows

Windows help has been a pain in the neck for far too long. Inevitably the feature that was introduced to end the thousand page manuals we used to get with all our applications is just as difficult.

You can judge its failure by the fact that the multi-tome manuals are still with us.

Now Microforum has put multi-media technology to bear on the problem of help for complex programs.

Enter the 24-hour virtual assistant, Laura. What you get is coherent advice on a number of widely-used packages including the likes of WordPerfect and Excel.

Whether it's strictly necessary to have a beaming face tell you what key to press for a particular command is something I strongly doubt. Furthermore, 24-hour Virtual Assistant hardly addresses the problems Windows help has, namely the laborious search and find function. In this respect, Laura is just as bad as Windows.

So what we have is a largely cosmetic add-on for 1994. It's harmless in itself, but don't go thinking of it as your saviour. You'll still find the manuals useful.

Martin Klimes

★★

Supplier: Laser Distribution
Contact: (0404) 46860
Price: £39.99

386DX PC with 4Mb RAM, a sound card, CD-ROM drive, SVGA card and Windows 3.1 or higher. 8Mb of RAM and a 486 are recommended.

GROOVES

PC Juke-Box

Sound and graphics make a huge amount of difference to a computer. Just think back a few years and you'll realise how user un-friendly we thought our PCs were. They were cold, techie machines which only spewed out unintelligible text on a green or orange screen.

Now the PC is a part of the entire household. Education for the youngest, games for the rest, and occasionally word processors and spreadsheets for the day to day bureaucracy. All of which feel far more personal with the right sound and graphics.

While Windows has made in-roads into killing DOS, by and large we still haven't taken to adding our own sounds to this graphical interface.

Grooves aims to rectify that by offering a hundred .WAV files that you can attach to your Windows events or other software packages. The files cover various lengths of music in every style from classical to calypso, and a good few effects to boot. They are clearly recorded and come over well on most sound cards.

Of course, you can get many samples for free from bulletin boards in the same way as graphics files, but the sheer convenience of having such a selection on one disc may sway you to splash out. It isn't value for money by any stretch of the imagination, but without trawling the 'Net you will have a tough time finding this quality.

Martin Klimes

★★★

Supplier: MDI
Contact: (0252) 737630
Price: £79.99

386 PC with 4Mb of RAM, 256 colour VGA, a sound card and CD-ROM drive. Grooves runs under Windows 3.0 or higher only.

Business 500

Business Reference

There's something to be said for reference software that picks a small field and specialises in it. At least you get more in-depth information.

Business 500, from Allegro, is a database that works on this principle, and does a fair job of it. Information on over 500 top companies is organised by category and key corporate topic. There are plenty of charts and graphs of companies' performance, and occasional videos to spice things up.

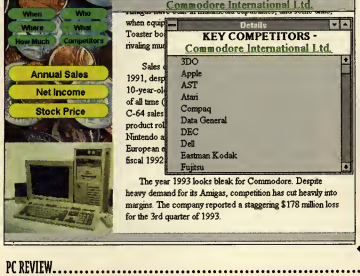
The search function is vital to any database, and Business 500 is not bad at all. If I could have left more than one window open for each company I was researching, I would have been happier, but you just have to plan round that when organising your text search.

Annoyingly, though, there are two factors that didn't enamour me of this particular database. It's really of niche interest to a few people only, made even less useful by the fact that it's American. That's right, they're US companies, not UK. Frustrating, as is the fact that the database was compiled almost a year ago, and is creakingly old. Some entries were very out of date, and with no regular update planned, it may well be obsolete already.

A shame really, since it's quite nicely put together, but the basic fact remains: this doesn't feel like value for money. Buy The Economist each week, and you'll be covered far better at less cost.

Martin Klimes

★★



Supplier: Unica
Contact: (061) 429 0241
Price: £41.13

486 PC, 4Mb of RAM, a CD-ROM drive, sound card, VGA graphics, 4Mb of hard disk space, and Windows 3.1 or higher.

Mapvision Plus

Computer A-Z

When the journey mapper Autoroute hit the shelves it caused quite a buzz. The route plans given were so accurate, down to 10 minutes on a four hour journey, that it became a standard addition for any computer owner who travels the country.

Mapvision Plus, also by nextbase, is effectively an A-Z for the PC. It comes in two versions, Greater London and Great Britain, as well as a combined version.

As well as an accurate series of fully zoomable maps, the package allows for editing of points,(☞p112)

BERLITZ BUSINESS JAPANESE

Language Tutorial

It all starts with that plinky music that made the old BBC prison series Tenko feel so Japanese. Then you get a picture of a traditionally-dressed Japanese gentleman, more plinky music, and the introduction goes on . . .

Once you hit the actual program, although there are far too many people in Kimonos and far too few in suits, you do get a good introduction to a tough language. All the important social situations you might meet are covered with a phrase book approach and a hell of a lot of useful material.

What makes Berlitz Business Japanese stand out, though, is the quality of speech by the actors used: it's clear, well rendered, and not too fast to follow or too slow to sound unnatural. And with lip-synching on the cartoon, it's far easier for you to to pronounce what you're hearing.

I did a four year degree in the language, and although I'm not saying that the Berlitz Business Japanese guide would have got me a better grade (about which, the less said the better . . .), it may just have made my first days in Tokyo a little less hellish.

Martin Klimes

★★★★

- **Supplier:** Sierra-Online
- **Contact:** (0734) 303322
- **Price:** £99.99

A 386 PC with 4Mb of RAM. VGA graphics, Windows 3.1, 20Mb of hard disk space, a CD-ROM drive and sound card.

Games in Spanish

Elementary Language Learning

Some people would argue that you can never be too young to start learning a language. Whether that's the case, Syracuse Language Systems' games-based concept is certainly capable of holding a youngster's attention longer than the latest episode of Transformers.

First things first, pick a language to train your child in. There are several in the series. You can choose Spanish, German, French, English, or even Japanese. Next, set up the software and put the child in front of the screen. The graphic environment should be easy enough for anyone to follow with the minimum of help needed.

The games themselves come independently of any boring lessons, so it's straight into the fun. There are several difficulty levels and practice screens. The quality of speech is good, and the chosen language is used throughout, even in option screens.

It's a brave attempt at early language teaching, and although it definitely needs to be used in conjunction with other tuition methods to make any serious headway, it is a useful way of generating interest in languages in a young child.

Martin Klimes

★★★

- **Supplier:** Infogrames
- **Contact:** (071) 738 8199
- **Price:** £29.99

For any of the Games in... series to run you must have a 386 with 2Mb of RAM, VGA graphics, Windows 3.1, a CD-ROM drive and sound card.

TriplePlay Spanish

Intermediate Language Learning

Also by Syracuse Language Systems, this package for nine-year-olds and older is currently available in French, Spanish and English version, although others are planned.

Once more, the aim is to provide a games-based immersion system of learning without relying on computer classroom lessons. There are three levels of learning, each building on the previous one, and a variety of subjects covered: people, places and transport, activities, numbers, home and office, as well as that old chestnut, food.

Graphically more advanced than the Games in . . . titles (see the previous review), TriplePlay has the feel of those text-book cartoon strips full of speech bubbles and signposts forming contrived storylines about waiters and imaginary families of sickeningly perfect siblings and parents. It's standard fare for any young teenager facing classes at school, but admittedly a highly effective language tool in the long run.

"Écoutez et repetez . . ." is replaced finally with "Amusez vous". No bad thing from the student's point of view, and maybe they'll remember more than I did of those speech bubbles.

Martin Klimes

★★★

- **Supplier:** Infogrames
- **Contact:** (071) 738 8199
- **Price:** £34.99

A 386 PC with 4Mb RAM. SVGA graphics, Windows 3.1, a CD-ROM drive and sound card are needed for the TriplePlay titles.

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Battle Isle Scenarios

THE ULTIMATE HUMAN BODY

Multimedia anatomy tutorial

The Ultimate Human Body differs from many so-called multimedia reference CDs in that it really does effectively mix different types of media. A welcome amount of care and forethought has evidently gone into planning the elements and sections of the program.

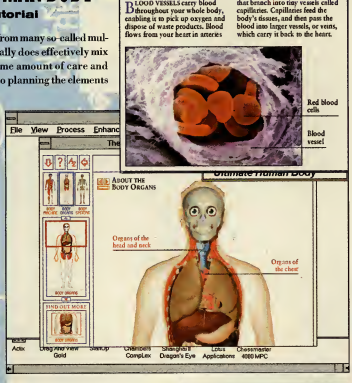
The colour diagrams of the body organs and systems are clear and detailed. The animations which show how particular organs or processes work are also clear and make a complicated subject look refreshingly simple (although I could have done with more of them). The still photographs are fascinating and the speech, which is mainly used for pronouncing names of body bits, is a bit superfluous for "the nose," but more useful for "the coccygeal nerves".

The icon-based interface makes it easy to find your way around and even if you do get lost, there's an A-Z index which will take you straight to the section you want.

In short, The Ultimate Human Body is interesting, even fascinating, and also has that magic ingredient that so many CD reference titles lack: it will do things that the equivalent illustrated book cannot do (the animations, and the option to remove organs at will couldn't be replicated, for instance). It might look a bit 'worthy' simply as a leisure purchase, but for anyone wanting a bit of help with Biology homework or with a healthy interest in their innards, they could do a lot worse than look at this. (If you'd like to read more about the Dorling Kindersley CD-ROM range, see the feature on the full series starting on page 42

Christina Erskine

★★★★



Supplier:	Dorling Kindersley
Contact	(071) 753 3488
Price	£79.00

Requires a 386SX with 4Mb RAM, 256-colour SVGA graphics, MPC compatible CD-ROM drive and sound card. Windows 3.1 or later.

STOWAWAY!

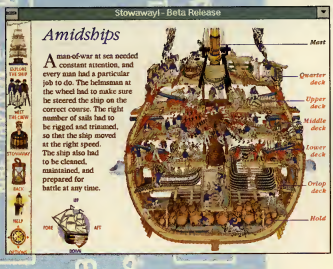
Life-on-an-18th-century-ship simulation

Stephen Biesty's astonishingly detailed pictures are well known enough in book form, but here in their CD setting they take on a new lease of life. On this Man-of-War fighting ship you can view the ship section by section, seeing exactly how the minutiae of daily life was carried out. Each section of each deck has its own animated sequence, complete with sound effects and explanatory text, so that by the time you've toured the entire ship, you'll feel you know the place intimately.

Next you can browse through the 'diaries' of the crewmen, where the life of each type of officer, seaman, or ancillary worker is described in detail, with cross-referenced illustrations to the main body of the ship.

The animations and notes cover every aspect of life on board, from the procedures in the heat of battle, to some decidedly bacchanalian R&R, to the captain's quarters, the dangers of hoisting the sail in a storm . . . it's all here. Every segment is beautifully illustrated in Stephen Biesty's painstaking, yet free-flowing style, making this program not only a mine of information, but fascinating just to look at.

And as if all this wasn't enough, there's a game in there as well — find the stowaway as you browse the ship.



Put it this way: I reckon I've learned more about life on the ocean wave in the 18th century from Stowaway than I ever did from school trips to HMS Victory, the Cutty Sark and the like.

Christina Erskine

★★★★★

Supplier:	Dorling Kindersley
Contact	(071) 753 3488
Price	£49.00

Requires a 386SX with 4Mb RAM (but don't expect it to be speedy) 256-colour SVGA graphics, CD-ROM drive and sound card. Windows 3.1 or later.

referencing, and holds a database of such usefuls as known police cameras. The maps are easy to read and never feel crowded, since you can remove or add detail at your discretion.

The question really is, do you need a map system such as this if you can get a good road atlas and an A-Z of London at a fraction of the price? Looking at Autoroute, people were more than happy to part with large sums of money for a well thought out product. Perhaps the same will be true of Mapvision Plus. If regular updates follow, then it may end up superseding conventional maps for PC owners, what with its range of print options and customizable features. It certainly is a well-conceived piece of software.

Martin Klimes

★★★★

Supplier:	Unica
Contact	(061) 429 0241
Price	£77.00

You'll need a 386SX PC with 2Mb of RAM, a CD-ROM drive, VGA card, Windows 3.1 or higher, and 4Mb of hard disk space.

PC Library

PC Reference Bookshelf

Another Allegro product in the Business Library mould, PC Library covers very different ground indeed. Using the same interface you'll find reference manuals on general subjects (eg PC Parts and Procedures) as well as specifics (such as a range of 10 minute guides to various packages from Harvard Graphics to Norton Desktop).

There are over 30 titles on the CD-ROM, and again the presentation is quite good. This is also very much a 'hunt for specific information' type of library and so is unlikely to tire your eyes like literary books on screen would, since you won't be spending hours at a time at it.

Furthermore, you'll always be by your PC when you need the information, so the 'usefulness of books being portable' theory that would snub such products doesn't work here, either.

One of my criticisms about Business 500 by Allegro was that it isn't

Supplier:	Nextbase
Contact	(0784) 421422
Price	£275 for full UK version

A 486SX or higher is recommended, with CD-ROM drive, SVGA graphics, 4Mb of RAM and Windows 3.1 or higher are required.

updated regularly. Not so PC Library, which is due for an update soon to take in new versions of the software covered. This will be available to current owners at a fraction of the cost of the original, as will future up-grades.

With this criticism covered, I feel happy to have PC Library on my system. Particularly since Windows help can be so poor and supplied manuals equally difficult to get to grips with.

Martin Klimes

★★★★

Lenny's Music Toons

Music Edutainment

Lenny's a pretty affable chap who'll invite you up to his New York apartment as soon as you load up Music Toons.

From this gathering point you can mooch around, flicking the TV channels, or take on one of Lenny's games.

Much as with Broderbund's excellent Rock and Bach Studio (reviewed last month) Lenny's Music Toons tries to put music into a fun and exciting context to hook children, as well as teach them something along the way.

Some of the same ruses are used too: you can make a video with a band of your choice, or set up a band in Lenny's theatre, for instance.

There's a basic interface to get used to, but the manual is good (and has some great ideas for making impromptu drum kits!).

The sounds are fun, being basically weighted towards modern rather than classical music. The characters are well drawn and fairly well animated. If anything, though, it's not quite as seamless and slick as Rock and Bach Studio, which was very carefully thought out indeed.

Martin Klimes

★★★

- **Supplier:** Computer Manuals
- **Contact:** (021) 706 6000
- **Price:** £42.25

Take a 386/33 PC with 4Mb RAM, SVGA graphics capability, a Sound Blaster card, a CD-ROM drive, and Windows 3.1 and you're ready to go.

PC REVIEW TRIED & TESTED

Some software gets deleted from the hard disk the minute a review is written — some hardware we wish we'd never laid eyes on. But there are products we see every month which we wish we could keep. It is these programs, devices and systems — those which we've worked with and found enjoyable, reliable and above all genuinely useful, above and beyond the call of duty, that rate an appearance on this page. Any of these products which we feature here we reccommend as worthy of inclusion on anyone's shortlist.

QY8
Yamaha, £208
Marvellously fun — and sophisticated — portable music sequencer you can link up to your PC or keyboards.

NuReality Vivid 3D
GenSys, £1,149
Surround sound system that does the business without multiple speakers or special software

How Multimedia Computers Work, Software Toolworks, £39.99
Enthusiastic and informative guide to the mysteries of the modern PC.

MJM 48666/DX2
MJM, £799 (ex VAT)
Well built and ridiculously well-priced for a 66MHz 486DX PC with this all round spec. Hasn't let us down, either.

Stowaway!
Dorling Kindersley
This is multimedia CD as it should be — beautiful, informative and easy to use, it offers more than a mere book or a database could do.

Recommended so far: Gateway 2000 486/33SX, Fauve Matisse, Microsoft Art Gallery, Microsoft Fine Artist, Media Vision Double Fusion LX, Orchid GameWave, Bluepoint Sound FX Classic 3000, Micrograph Tabby, Dan Vantage Multimedia PC, KidDesk, NEC 3Xi CD,WordPerfect InfoCentral, Mitsumi FX001D

Shareware reviews

The shareware scene is a great source for utilities, high quality applications, and also top quality games, including such classics as Doom, Raptor and Jazz Jack Rabbit. This month Alan Clark takes a look at some of the latest games to appear on the market.

PRODUCTS

Apocalypse Abyss

Lucidia — the land of the dwarves has had all its people captured by the evil wizard Niche. Everyone, that is, except Asbtar. Taking control of Ashtar you must travel to the Blood Mountains, Niche's lair and home of the Apocalypse Abyss, where you must journey through the various dungeons solving puzzles in an attempt to defeat the evil wizard and free your fellow dwarves. Though graphics and sound are simple, the puzzle element of the game is just right and once you start playing you'll find it hard to put down.

Available from After Hours BBS 0785 228214

Strong strategy element, makes up for simple graphics.

Price £10.60 approx — PC REVIEW 6 PLUS

Desert Storm Command

A bit of good old arcade action for you this time with Desert Storm Command. This warfare-based arcade game is split into two basic parts: Sniper and Scud. Sniper is a first person perspective action sequence testing your reflexes in Operation Wolf style mayhem. In Scud you're treated to a side-on view of your base that is under fire from scud missiles. You control an anti-missile gun and must destroy the scuds before they impact on the various buildings. Enemy fighters and helicopters appear from time to time and these help add to your bonus. Although the anti-missile gun can be a tad dodgy on occasions, if you like fast, frantic shoot 'em up action, then you should find this enjoyable.

Available from After Hours BBS 0785 228214

Operation Wolf style action in the Sniper section.

Price £13.30 approx — PC REVIEW 6 PLUS

Brutal Battle — The Quest for Talis Ra

A time experiment has gone wrong and an evil warrior from the future has killed the scientist controlling the experiment and stolen some important circuitry. Time holes have been opened by this evil warrior and these are guarded by powerful minions. In Mortal Kombat style action you have to take on these henchmen in a battle through time to save history. The graphics and animation aren't as fluid as Mortal Kombat, but this game is still a bold attempt to recreate all the atmosphere of this classic combat game. A tough, interesting game.

Available from After Hours BBS 0785 228214

Battle your way through this game to save all of mankind.

Price £12.60 approx — PC REVIEW 7 PLUS

Dr Riptide

You are Nick Nautilus, SNAT (Special Naval AgenT). You have been called upon to seek out and destroy the underwater HQ of Dr Riptide, the inventor of the Tuna-matic that will turn all living matter into a marketable delicacy. Riptide is fast becoming a rich and powerful man living off the profits of his trendy food and it's up to you to stop him.

To succeed in your mission you take control of a small submarine with which you must navigate through the various underwater catacombs off the coast of Australia. Battle with Riptide's underwater minions and solve various traps and puzzles on the way.

To aid you in your quest you can pick up extra and better weapons for your sub, increase your shields and also take advantage of JASON, a nifty little micro-sub.

The graphics of Dr Riptide have a very cutesy nature, the music and sound effects are great and the whole game is great fun to play.

Available from After Hours BBS 0785 228214

Searching the caverns and catacombs for Dr. Riptide's lair can be fraught with danger.

Price £20 approx — PC REVIEW 7 PLUS

Rotaktix

The nearest thing this game can be described to is a one-player version of Connect Four, but with this version of that classic game, the pieces are dropped into the grid one row at a time and it's up to you to move them from left to right to create the match; horizontal or vertical bars.

There is a time limit for each row that gets gradually shorter as the game progresses and a specific number of bars you need to create before the grid fills up. In the early stages of the game this grid is emptied at the end of each level. But soon you find yourself starting the next level where the last one left off, usually with half a screen of tokens already! The graphics and sound effects are pretty simple, but to be honest this game doesn't need amazing graphics and astounding sound effects because it relies more on sheer playability and addictiveness, which it oozes from every pixel. A good example of what an addictive puzzle game should be.

Available from After Hours BBS 0785 228214

Create as many colour bars as you can before the screen fills with this addictive 'one-man connect four' style puzzle game.

Price £12.60 approx — PC REVIEW 8 PLUS

Rise of the Triad

It's not quite ready for review yet, but Rise of the Triad is worth keeping an eye open for. This Wolfenstein/Doomesque 3D graphic adventure casts you as a member of HUNT — High risk United Nations Taskforce. On a routine reconnaissance mission you are suddenly overwhelmed by fanatical members of the Oscurido Cult. Your only chance of escape is to take on the might of the cultists or die trying. Play over 30 levels against a variety of digitised actors as cult members, with a huge arsenal of powerful weaponry at your disposal. Rise of the Triad will be out in October.

Rise of the Triad looks set to be the game of this Autumn.

Price TBA — PC REVIEW PLUS

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- Encyclopedia Of Science £64.99
- The Way Things Work £44.99
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Diggers £25.99
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Elite 2 ..... £25.99
Empire Deluxe Master Edition £24.99
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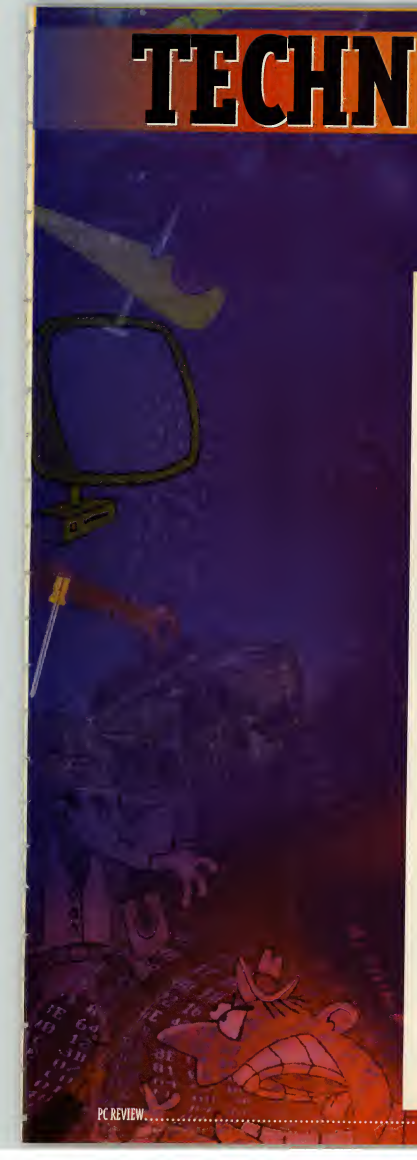
TECHNICAL HELP



PCs are great — most of the time. But when they're not being great, they can be the most irritating, frustrating, downright incomprehensive machines you ever tried to use. So where can you go for help, when the manuals are full of jargon and books weigh a ton and cost a packet? Try PC Review's Technical Help section. We run workshop's on popular applications, a regular help section which explains common procedures, a jargon busting glossary, and if you're still stuck after that, Mike James is on hand to solve your problems on our Q & A pages.

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Graphics Workshop

Magic with morphing

The graphic technique of morphing (changing one image to another) was made infamous by the film Terminator 2. This month Alan Clark takes a look at two new morphing packages for the PC.

Remember the film Terminator 2 with its amazing special effects? Thought you might like to try recreating some of the effects of the T1000 for yourself? Then get hold of 40 high-spec DX2/66s or Pentiums, software such as 3D Studio, an art/graphic-design degree and a few weeks programming time and you might just do it.

Unfortunately, most of these requirements are a little bit outside the reach of most of us. Which doesn't mean to say you still can't attempt your own smaller, less expensive, morphing projects at home using one of two packages — PhotoMorph 2 and Morph V1.5

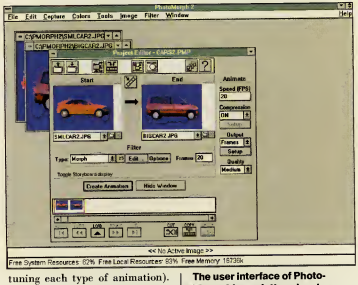
But what are these packages and just exactly what do they do? Let's examine them both and see.

PhotoMorph 2

Both of the packages examined here will run on any machine capable of running Windows 3.1. But it is advisable to have a minimum of 4Mb of RAM and a generous amount of free disk-space. Which is all just fine for the first of our morphing packages, PhotoMorph 2, which comes courtesy of LTS.

At the heart of the PhotoMorph 2 package lies the Project Editor.

This is the place where you specify the start and end of files. These can consist of either still images or .AVI files, and the type of manipulation (as well as morphing, PhotoMorph can create smooth transitions, warps, distortion and a variety of other video editing effects, with a wealth of further options for fine tuning each type of animation). Other parameters that need to be set include: the length, (in frames,) of the morph; transition; warp; the frames per second rate; compression type and ratio and a choice of output files — AVI file, individual frames or an Autodesk .FLC animation.



The user interface of PhotoMorph2 is uncluttered and very straightforward to use; all the most important tools and options are contained within the Project Editor for easy access.

Once you've set the various options, it's time to set the control points on the two images you wish to morph; basically what you are doing here is matching up the two images and telling the software at what point in the first frame it needs to change to create a similar point in

MIGHTY MORPHING STEP-BY-STEP

Begin by setting your control points. Click on the first image and then match this point up to a similar point on the final image. For example, select a point near the middle of the wheel in the first image, then move the point placed in the final image to the middle of that wheel. Continue this around the two images. Remember, the more control points the more fluid the morph.

Here we have our first frame....

Here you can see that the first image has just started to morph.

the last frame; (see the Mighty Morphing Step-by-Step panel below.)

All that's left to do now is to click on the Create Animation button, go and make a cup of tea, watch your favourite video and maybe pop down town, all depending on how fast your machine and how complex the morph. Actually, that's a little exaggerated. The sample animation shown below only took two and half minutes on a 386 without a co-processor; although some of the more complex effects will take longer. For times like this, PhotoMorph 2 can be put into background render mode so you can get on with other things.

Before committing the program to a complete rendering you can generate a preview file that will show specific frames from the animation. This helps ensure you've set enough points and that these points are in the required positions.

PhotoMorph 2 also includes a range of image manipulation commands with which you can edit your images before creating your animation. Such commands include invert, flip, mirror, tile and mask. You can adjust the resolution and aspect ratios of each image, independently and you can also add captions to each file. Contrast and brightness, hue and saturation can also be adjusted.

Eleven special effects filters are also available to give your images additional distinction and flair. These include sharpen, despeckle, emboss, blur and noise to name but a few. Probably the most diverse filter is old movie. This gives the image a sepia tone and the appearance of an old photograph or movie; great for adding a touch of nostalgia!

But PhotoMorph 2 can do much more than alter one image or video file onto another; for a start you can include a variety of filters and transitions to create really bizarre animations. PhotoMorph 2 also contains functions for techniques such as colour keying: chroma key; blue screen and luminance are the three available. What these effects enable you to do is select a range of colours or brightness values and make them transparent to a background image; in other words those colours in the Start image become transparent and the End image shows through.

Making use of the Alpha Channel is another advanced feature of PhotoMorph 2. This Alpha Channel is an extra 8-bits of information that determines the transparency of particular areas of image. This can either cover the whole image, or you can specify shapes to use as masks. By using the Alpha Channel you can create some pretty bizarre effects.

PhotoMorph 2 has a great range of features for creating a variety of morphing and video effects. The user interface has been well laid out and is uncluttered. The whole program is simple to use. Combined with a well written, easy to follow manual you could be creating your own movie special effects in no time.

PHOTOMORPH 2

Supplier:	LTS Ltd
	Computerbild
Contact:	(0386) 792617
Price:	£116.33

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Morph v1.5

Morph v1.5 is the second of the two packages featured in this article. As with PhotoMorph 2, Morph v1.5 will morph or warp animations together as well as individual still images — this is known within Morph as dynamic morphing.

Everything within Morph is centred around the storyboard; a simple dialogue box that shows the start and end image of each sequence, the time duration of the entire movie and the time duration of the particular sequence.

Within the storyboard the images are displayed as thumbnails; double click on each to display the full image and then enter all the appropriate control, or Key points. Various compression options including the frames per second rate, compression method and quality need to be set and then you're ready to create your morph animation.

The amount of frames your morph will use depends on the length of the movie and the frames per second (FPS); for example if your morph is three seconds long and the FPS is five, that will result in a total of 15 frames of morphing animation.

This is done by choosing the save option from the file menu. When you choose this option, you will be prompted for a file name and then Morph will display a small dialogue box displaying a thumbnail of the particular frame being rendered, what frame out of the total is being rendered and which sequence the frames are making up. Once that's completed, load the .AVI file into the player and see the results.

By adjusting two sliders, the colour shift and position shift, you can vary the way the two images morph together; for example if you're morphing a person with blue eyes to a person with green eyes by adjusting the colour shift, you can keep the blue eyes until right near the end. With the position shift slider you can keep the position of specific points close to the start image and then change quickly to the final image towards the very end of the morph.

Unfortunately that's about it to Morph. It doesn't contain as many features as PhotoMorph, neither is it as versatile. The interface is pretty sparse with everything being accessed via pull down menus; if you're not sure where the particular set of options are that you require, you'll need to hunt through each menu until you find them, although a small toolbar is present on the screen containing a selection of basic tools for placing key points, magnifying images, and editing functions such as cut, copy and so on.

Performance is similar to that of PhotoMorph 2 and Morph is still as easy to use. But because of its limited range of options, and higher price my recommendation has to go to PhotoMorph 2.

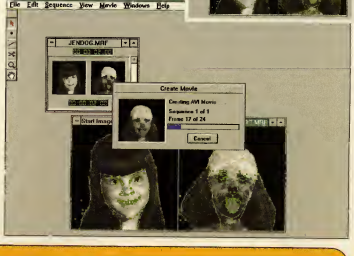
MORPH V1.5

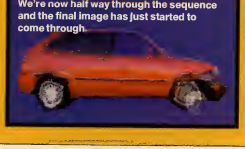
Supplier:	LTS
	Softline Ltd
Contact:	(081) 401 1234
Price:	£139.83

PC REVIEW 5

Right: the warp option has been used to move parts of the start image to the positions specified in the final image to create other bizarre effects.

Below: Morph in action. The small image within the create movie dialogue box updates to show you each frame in the animation.





We're now half way through the sequence and the final image has just started to come through.

The final image is almost here but you can still just make out parts of the first image.

The sequence is now complete; the small car of the start image has been totally transformed.

Help!

Buying a modem

We kick off this month's Technical Help section with a starter guide to fitting a modem to your PC, in line with our Internet special. We've also got some very useful tips for Windows users and for those of you planning to buy a new PC, we have some handy hints.

Even strong men who install sound cards and CD-ROM drives before breakfast can quail at the thought of fitting a modem. For some reason, it's seen as a far more specialist operation than simply adding another storage device. This has probably got something to do with the fact that modems have a whole new subset of jargon and configuration to be mastered, but in truth, you don't need to sit down and learn by heart what things like 'parity' and 'stop bits' mean. All you need do is let the software do most of the work for you.

For the sake of this article, we'll assume that you have bought a modem, that it is sitting in its box, and that in the box with it is the software, on disk, that you need to install in order to use the modem. But first of all, what do you plan to use this modem for? The modem itself will simply connect your PC to the telephone line, but from there, you can configure it to work in several different ways:

- you can use it to dial up bulletin boards, areas from which software can be downloaded, or news and information exchanged with other users of that bulletin board.

- you can use it to dial up and join the Internet, a loose conglomeration of computer networks around the world which contain official information outlets, and also informal interest groups, for just about every special interest, however eccentric, that you can think of.

- you can use it to send electronic messages to friends and/or business contacts, or to send software or data files to them (and receive them).

- you can use it to play multi-player games, either against friends in games that support modem play or against strangers in those run centrally from a host computer.

To do this, all you need is the modem and software that it came with. The modem provides the physical connection between your PC and telephone network, the software enables you to make use of it. We'll start with the physical connection which is attaching your modem to the PC.

Many PCs have two serial ports (see picture 1), which is useful because many mice also use the serial port. Serial ports come in two varieties: 9-pin and 25-pin and PCs with two serial ports should have one of each (if you think you have the 'wrong' number of pins on your serial port, see (2) below). If your mouse is already connected to COM1 (your first serial port), your modem will need to be connected to COM2 (your second serial port. And how do you know which of the ports is COM1 and which COM2? A few helpful manufacturers label the ports at the back of the PC. Most don't, however, but if you keep a close watch on the screen messages when you switch the PC on, you may well see a message such as "Microsoft-compatible mouse found at COM1" or similar. Otherwise, consult your PC manual — or resort to trial and error: statistically you should be right 50% of the time.

DON'T LET THE JARGON GET YOU DOWN

Modems talk in frightening terms like 'databits', 'parity' and the like. When you are quoted the name of a bulletin board, you'll often see a line such as "8, N, 1" after the board's name and number. Don't panic — it's just a set of parameters.

The first number refers to 'databits' and the answer will usually be either seven or eight (and is much more likely to be eight). So in the example above, when your program asks about the number of databits, simply input 8.

The N refers to 'parity' and can be odd (O), even (E), or none (N). In the above example, input N for the parity.

The final digit, 1, refers to the 'stop bit', and will usually be either 1 or 0. So in this example, input 1 for the stop bit.

For transfer speed, input the fastest that you know the modem will do — check the manual to see what this is. If you haven't a clue and the modem is a new one, try 9,600bps or 19,200bps.

If there isn't an 8, N, 1 type line quoted, then that formula is a better guess than any other for the parameters that you need. If that doesn't work, ring the board up on a voice phone and ask which combination is wanted.

And for those who like to know the 'why' of these things: eight databits means that the data you're sending or receiving is composed of eight bits per character (seven databits means seven bits per character). Eight bits is by far the most common.

Parity is an error-checking mechanism, by which the software checks that the data it's receiving isn't corrupted. (See glossary overleaf). Stop bits mean the delay between sending each character (or byte) and thus a delay tells the receiving machine that an entire byte has been sent. Always set stop bits to 1, unless a particular program or board demands otherwise.

Picture 2 (opposite, below) shows a serial port adapter. If you want to attach the modem to a 25-pin port and your modem cable has a 9-pin connector — or vice versa — you can easily buy an adapter like this. Before you do, however, check all the items in the modem box carefully. You may well find that the modem's serial cable has dual connectors (see picture 3, below), or that there is a serial port adapter in the box — many manufacturers do include them in the package.

Above (picture 3) is a serial cable with a dual connector to fit either type of serial port. The single 25-pin male (with pins) end goes into the back of your modem. At the other end, select which connector fits the free serial port at the back of the PC, and connect it. The unused connector will just have to dangle from the back of the PC. At this point, you may encounter a couple of hitches. If your serial cable doesn't have the option to connect either to a 9-pin or 25-pin, and the free PC port is of the wrong type, get an adapter (above). If your PC only has one serial port and it's already in use — most likely by the mouse, then you'll be restricted to using an internal modem (in this case, pack up the external modem again, take it back to the shop and exchange for an internal model instead).

Although fitting an internal modem (picture 4) involves opening up your PC, installation is simpler than with an external modem, and you don't end up with so many wires hanging out of the back: no separate power supply and no serial link to worry about. The procedure is the same as for adding all peripherals to expansion slots, as detailed in numerous editions of PC Review, including last month's issue.

1) Disconnect the PC from the power supply, clear a space and unscrew the PC's casing.

2) Lift or slide the lid off and identify the bank of expansion slots which lead to the strip of steel backplates at the back of the machine. Choose a free slot.

3) Unscrew the top of the backplate corresponding to that slot and remove the backplate (keep it somewhere safe in case you ever want to take out the modem).

4) Now line up the edge connector of the modem (see picture 4, adjacent column, below left) with the middle of the expansion slot and firmly, yet gently, push the edge connector fully into the slot — a slight rocking motion works best.

5) Screw the modem's backplate into position where the old backplate was, replace the casing, reconnect and off you go!

This simple modem-to-phone cable is fairly self-explanatory. The phone jack on the left goes into your phone socket, the smaller clear plastic jack into your modem (internal or external). If you are using a separate phone socket for the modem, then that's all there is to it. If the modem and the phone are going to share a socket, then you can either attach the phone to the modem and the modem to the phone socket — if the sockets on the modem allow — or you will need a double jack in your phone socket (widely available from phone shops and electrical stores).

FAX MODEMS

Many modems sold these days will also send and receive faxes. The software which controls fax sending will be separate to the overall communications software and therefore will generally need to be installed separately.

You can take pre-written documents to be faxed (although they may need converting — some fax programs are quite fussy about precise file formats) and create a cover sheet for the fax, before typing in the fax number to send it to. The document will then print out on the remote fax machine.

Then you can receive faxes as well, setting up your PC and fax modem to receive faxes 'in the background', so that you can get on with your Windows or DOS applications at the same time.

You can then view your incoming faxes, print them out or (usually) convert them to another graphics file format if you wish to edit them or save them in this way.

We've found that running a fax modem with any regularity on a PC that's in continuous use becomes unwieldy very quickly but for occasional use it may be more convenient than spending money on a separate fax machine.

However, we now confidently expect to hear from hundreds of readers who use a fax modem day in, day out, quickly and efficiently, so it's really a matter of convenience.

Now, this one (picture 6, below left) is *really* self-explanatory. External modems need a power supply: the three-pin end goes in a power point, the other end in the back of your modem. Internal modems take power from the PC.

And here's where all the cables go. As labelled in the picture, the phone jack connects to A, the serial cable to B, and the power supply to C. The segment labelled D are a set of DIP switches for configuring the modem. These deal with things such as modem security and clock settings, and they shouldn't need to be altered at all.

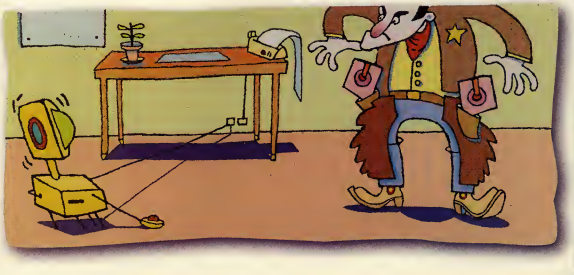
Installing your software

Connecting up the modem is pretty straightforward. Getting the software up and running is another matter, especially as not all software behaves in the same way. You do not have to use the software provided with your modem, and there are plenty of communications programs available, both commercially and as shareware — programs such as Odyssey for example.

Whichever package you use, however, the following acts as a typical set of guidelines:

1) Connect up the modem to power supply, telephone socket and to the PC and then switch it on.

2) Insert your software installation disk into drive a: and type the installation command. This is usually Install, but might, especially in Windows, be Setup (and in Windows you'll want either to Run the command or select it in File Manager).



3) You should then see an opening screen. Most software will first test your modem to check that it can recognise it OK, then ask some questions about default speeds and configurations. When the program asks if the modem is on COM1 or COM2 (it may even refer to COM3 or COM4), this corresponds to the serial port at the back of the PC into which the modem is plugged. If your ports are not labelled, you will either know or have to guess which of your ports is which. If you already have a mouse connected to a serial port then the chances are that the port you've just used for the modem is COM2. If you had a choice of two free ports and you used the 9-pin for the the modem, this is probably COM1 and the 25-pin COM2 — but that is a generalisation.

Put it this way, if you select COM1 and the program says it doesn't recognise it, then it'll be COM2. Go back and change the selection.

Another reason, at this stage, for the program not recognising the modem is if you have been asked to input — or select from a menu — which model the modem is and the program doesn't like your selection. Check specifications with your manual and change if necessary. If you still have no joy, try looking for a generic modem option that you can choose, that will at least get the installation program moving.

4) Next, the program will go through a number of tests. Really thorough programs will test your telephone line and connection. Others may simply copy over the files and leave you to it.

5) If the installation program made any changes to your Autoexec.bat or Config.sys — or Windows .ini files — you will need to restart the computer — or Windows — before you can begin modeming.

6) To use the communications software, so that you can use your modem, type the start-up command as detailed either on-screen after installation or from the manual. Or, double-click on its Windows icon.

7) Find a bulletin board to dial up — there's a selection given in our Internet article starting on page 26 — locate the dial command and add it to your on-line phone book (this will be on a menu option. Anyway, give it a try. If you don't get through first time, one of the following might be the reason:

● Are you using a direct phone line or is it part of an exchange? If you have to dial, say, 9, to get an outside line on the normal phone, then you'll have to make 9 the first digit of the destination number on the modem.

● Does the bulletin board perhaps think you're running at a different speed to the one you're actually using? Are you trying to do a 7, E, 0, when what it really wants is an 8, N, 1? (If that last sentence terrified you, then we suggest you take a look at the panel on this page, as well as the one on page 120 too.)

● The dial tones you hear on the modem are, of course, the same dial tones you get on a voice phone. So, if it sounds like an engaged signal, it *is* an engaged signal.

● If you get nothing but garbage on-screen — or nothing at all — before you dial out anywhere, you may well have an IRQ conflict with another device using a serial port. Try reinstalling on another COM port.

● If you get the problem after you've connected to a remote service, it's more likely to be a bad line. Try again later.

GLOSSARY OF MODEM TERMS

Baud
This is pretty well interchangeable with bps, but the two terms don't quite mean the same thing. The modem's baud rate states how quickly computers can communicate with each other, and is measured in bits per second.

Databits
Refers to how many bits per character are in the data being transmitted. (See panel on page 120).

Duplex
Expressed as either half-duplex, or full duplex. In half-duplex mode, characters that you type on your keyboard are displayed on your screen, then sent to the remote computer. In full duplex mode, those characters are sent to the remote computer and simultaneously 'echoed' back to yours.

ISDN
Stands for Integrated Service Digital Network, the digital telephone network that is superseding the old analogue network.

Local echo
See Duplex, above.

MNP (often quoted in levels, ie, MNP 4, or MNP 5)
A system of error detection and correction used when sending and receiving data.

Parity
A form of error checking when data is received from a remote modem. Suppose seven databits are being used in data transmission (see databits, above). The eighth bit is the parity bit and will be set to odd or even. When data is received, the parity bit is checked, and if it doesn't conform to the setting, then the data has been garbled in transmission and so an error is reported. Thus, also, when you are using eight databits, parity will be set to none, because there's no parity bit.

Protocol
A means of sending and receiving files. By agreeing to a standard protocol, the software sending the data knows how to send it, and the software on the destination knows in what form it will arrive in.

Stop bits
This refers to the delay between one character (usually a byte) being received and the next one being sent.
A delay tells the receiving computer that an entire byte has arrived, so it helps ensure that the data is received correctly.

Sysop
Stand for SYStem OPerator, the supervisor of a bulletin board.

V.32, V.32bis, V.42, V.42bis
Protocols which define the ways modems communicate with each other. V.32 covers speeds of 4800bps and 9600bps, V.42 covers V.32 plus speeds up to 14,400bps. You'll find more on these terms on page 103.

X-modem, Y-modem, Z-modem
Protocols for transmitting data from modem to modem. Z-modem is a worldwide standard and the one you should always aim to use.

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Eight things you might not know about Windows.

● ***Switching between open applications.***

In Windows, you can keep more than one application open, even if it's not visible on-screen. There are hotkeys available which will take you quickly from one to another. Press Ctrl-Esc to see a list of all open programs, and select with the mouse or cursor keys, which one to move to next. You can either double-click on the name of the application you want, or click once on the application name and once on the Switch To option in the panel below the list. A second way is to press Alt-Tab, which takes you to the next open application instantly. Press it again to move on to the next.

● ***Alt-Enter***

Alt-Enter is a dual-purpose hotkey. If you highlight a file with a single mouse click and then press Alt-Enter, you'll see a dialogue box with lots of details about that file — and also an option for you to change its associated icon, but see over for more details on this.

More interestingly, if you run a DOS application from within Windows, or you're simply running the DOS prompt from Windows, hit Alt-Enter and you'll see your program running in an on-screen window within Windows.

This makes for easier cutting and pasting between applications and also means that you won't 'forget' you're in Windows when you come to the end of your PC session.

● ***Creating icons for anything***

Normally, Windows will create an icon for programs which run specifically under Windows. When you initially install Windows, it will also look for applications that it can detect and offer to create icons for these, too. But you can create an icon for any program — here's how.

Open up the program group that you want the icon to be placed in — probably Applications, or Accessories. Now open File Manager, and position the File Manager window so that your 'destination' window is also visible. Locate the file that starts the program you want 'iconised' — it will be the command you normally type in at the DOS prompt plus the extension .EXE (most likely), .COM or .BAT (possible). Thus, if you usually type DP to start Deluxe Paint, look for a file called DP.EXE. Highlight this file with a single mouse click, keep the mouse button pressed down, and 'drag' the file over to the destination window.

To create an icon for a program in Windows, locate the launch file in File Manager (above), and 'drag' the file over to the desired window (below).

It will appear in the destination window with an icon labelled MS-DOS and the name of the file written underneath. If you want a different icon, highlight it with a single mouse click and press Alt-Enter. You will now see a dialogue box with an option, Change Icon ... Select it.

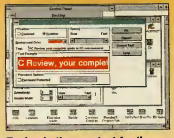
Windows will probably now tell you that it has no icon set up specifically for that application, so you will have to choose one from its general selection. Click on OK, and you'll be presented with a veritable raft of icons, any one of which you can choose for your application. Now you don't have to exit to DOS to use this program — just click on the newly created icon as if it were any Windows application.

NB Some programs simply won't run from Windows whatever you do, and even creating an icon for them won't help.

● ***Create your own screen saver***

The Marquee screen saver supplied with Windows puts moving text on the screen which can be edited, so you can leave messages for colleagues and family while you go out to lunch — even if it's only "Don't touch this machine!"

To do this, double-click on Control Panel, then on Desktop. In the Desktop box, there is a screen saver selection option. Click on the right arrow to bring up the list and select Marquee. Now click on the Set-up box and type in the text you require. To choose your own colour and typeface, click on Format Text. Once everything is to your liking, click on OK, then OK again in the Desktop box and you're all set.



Typing in the new text for the Marquee screen saver.

● ***Copying files by dragging***

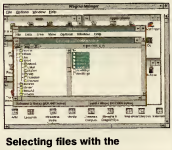
It's often easier to do long batch copying and deletion jobs in Windows' File Manager than at the DOS prompt, but this can still mean typing. To copy a file from a subdirectory in drive C: to a floppy disk in A:, you can simply click on the file required, and keeping the mouse button pressed down, drag the file to the A: drive icon on the bar above the file listings.

● ***Multiple file selection***

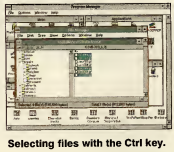
To select a file in File Manager, you just click on it with the mouse. And most people know that if you click on one file, then hold down the Shift key and click on another file, then all the files between the first and second file selected will be highlighted. But did you know that if you hold down the Ctrl key instead of the Shift key you can select just the files you want by clicking on them?

● ***Setting confirmations in File Manager***

Once you've got your Windows start-up screen looking exactly the



Selecting files with the Shift key.



Selecting files with the Ctrl key.

way you want it — all your applications in a window opened at the top right, with the control panel, File Manager and other Main icons on the left, and all the games you play neatly stretched along the bottom, maybe — go to Options, and click on Save Settings on Exit, so that it is ticked. Then when you next load up Windows, your screen layout will be preserved, and you won't have to rearrange everything again.

● *Getting help*

Windows has an on-screen help facility which also includes a glossary. So if you come across something you don't understand, then rather than scrolling through reams of preamble in the main help and tutorial screens, just look up the word in the alphabeticised glossary — often quicker. To find it, select Help in Program Manager, then Glossary from the menu bar in the Help screen.

BUYING A PC

It would be silly to pretend that choosing and buying a new PC is anything other than hard work, but the worst mistake that you can make is probably to be ill-prepared for the sheer wealth of choice you'll be presented with. This PC Review guide to buying a PC is not intended to provide hard and fast rules, but we hope it will give you some guidelines and point you in the right direction.

Before you do anything, you should ask yourself two key questions:

● What will I use a PC for? Business, games or a combination of both.

● How much can I afford to spend? Set an upper limit as an optimum price (say, £1,000, but of course it depends on your budget) and a top limit, above which you will not (cannot) go, no matter what's on offer (say, £1,200). This gives you a bit of flexibility, but also ensures you don't feel pressured to go over your absolute budget limit.

Secondly, you need to work out some details of the type of PC you want. If you do want to use the PC for anything processor-heavy, such as games, or graphics packages, you'll need to make sure that the PC you buy is up to the job and won't slide into obsolescence within six months. The table here shows PC Review's minimum recommendations for an all-round PC which will cope with entertainment software, and other leisure utilities such as graphics, or music. And remember — we said minimum.

WHERE TO BUY

Your easiest port of call is probably one of the high street or multiple stores. For most people this will mean Dixons, Currys, or a 'superstore such as PC World (and it may come as a surprise to you to know that Dixons, Currys and PC World are all owned by Dixons itself). Dixons has 200 outlets which incorporate in-store Business Centres and plans to expand this to 350 within three years. In addition to its high street stores, Currys has about 150 Curry Super Stores. There are eight PC World outlets, in Croydon, West Thurrock, Brentford, Staples Corner, Cardiff, Bristol Parkway, Leeds, and Northampton, with another four planned this year.

Dixons says all its staff should know something about all of their products and that also individual staff have been given special training about specific items.

Nothing too frightening about these outlets then, but . . . the choice of PCs and peripherals on sale is not exactly extensive. And there's no negotiation about exact configurations. What you buy is what you see, straight off the shelf. You cannot ask for extra RAM to be inserted or mix 'n' match between monitors, keyboards and hard drives, although you should get a choice of printers. But it does mean you may have a problem matching your ideal PC with the deals on offer.

PC World stores are targeted at the second or third time-buyer. The staff receive training direct from the PC manufacturers so they should be able to answer the most technical of questions. The stores have an area dedicated to installation and

PC ESSENTIALS

Component	Minimum	Optimum
Processor	486 SX, running at 25MHz	486DX running at 33MHz, or 66MHz if your budget will stand it (1)
RAM memory	4Mb	8Mb
Operating system	MS-DOS v6.x	MS-DOS v6.2
Graphics card	SVGA (Super Video Graphics Array)	SVGA
Hard drive	120Mb	200Mb plus
Sound card	Sound Blaster Pro-compatible. And don't forget speakers.	
Floppy disk drive	Single 3.5", 1.44Mb (high density) will do just fine.	
Mouse	Two-button, Microsoft compatible mouse should be included in the package.	
Expansion slots	Two free 16-bit slots (2)	Four free 16-bit slots (3)

Component	Minimum	Optimum
Serial ports	One	Two
Parallel ports	One	
Software	MS-DOS (see above) Windows All installation software for mouse, sound card and graphics card.	As minimum, left, but with extras
Warranty details	One year 'back to base' Telephone hotline	One year on-site Telephone hotline
Almost essential		
CD-ROM drive	Double speed internal or external model (4).	
Desirable		
Joystick	Two-button analogue model (5).	

Notes

(1) Warning: "Pentium Ready" or "Pentium technology" are nice pat phrases to be seen on an increasing number of PC adverts. It means the manufacturer claims the machine is capable of being upgraded with a Pentium chip. If you see "Intel Verified" it means that Intel — the manufacturers of the Pentium chip — has tested it with this PC.

(2) The clever question to ask here is how many free expansion slots there are in the machine you're considering, and 'free' means with unrestricted access. We've seen far too many machines with, say, six expansion slots, two of which are in use, and with another two blocked by cabling — or even by the power supply unit — so that in fact only two are free. Your sound card and graphics card will probably take up two slots, so it really is worth checking.

(3) 16-bit slots take 16-bit expansion cards (surprise, surprise). They are distinguishable to the casual eye in that they have two distinct slots for a single circuit board to plug into, as opposed to just one slot.

(4) Some software houses have already stated they will have switched to CD-only product by next year. Others will almost certainly follow. If you buy a PC with a CD-ROM drive we would recommend a minimum running speed of 33MHz and 8Mb RAM.

(5) Check that the PC you're going to buy has a game port, or buy a game card as well (takes up a free expansion slot).

And how much will this 'minimum' PC cost? We reckon you could get this set-up for around £1,200, including VAT. And if scour adverts and mail order pages for bargains, you could probably get it cheaper.

GLOSSARY

8-bit: a bus (see below) or processor which can transfer and process data eight bits at a time. See bits, below.

16-bit: a bus (see below) or processor which can transfer data 16 bits at a time. A 16/32-bit processor, such as the 386SX takes data in and spurts it out 16 bits at a time, but internally processes it 32 bits at a time.

32-bit: a bus (see below) or processor which can transfer and process data 32 bits at a time.

Analogue: a device capable of representation by electrical voltages rather than electrical signals.

Ansi.sys: this DOS file can be loaded as a device in Config.sys and then used to present very basic coloured block displays on-screen.

ASCII: (*pron Ass-key*) stands for American Standard Code for Information Interchange. An ASCII file is a plain text file which contains no codes specific to the software the file was created with.

Autoexec.bat: this is a file that you create on your PC which is acted upon every time you switch on the machine and which tailors the PC's configuration.

BASIC: stands for Beginners' All-purpose Symbolic Instruction Code. A programming language.

Batch file: a file with the extension .BAT consists of a series of other DOS commands, so that you can implement a series of commands in one go. A very simple batch file might consist of the following:

```
CD\
MOUSE\MOUSE
CD THARG
THARG
```

which would move you into the root directory, load up the mouse driver, move to the Tharg directory and start up the program Tharg. If you named this file GO.BAT, you would only need type GO to load up Tharg.

Baud rate: speed of transfer by a modem as measured in bits per second. See modem.

Bit: the smallest unit of computer data, equal to either of the digits 0 or 1 (bit actually stands for 'binary digit').

Bitmap: a way of defining a graphics image so that one bit equals one pixel.

Booting: booting up the PC is the same as switching it on and loading up the start-up programs.

Buffer: an area of memory used for temporary storage. The buffers command in the Config.sys files specifies how much RAM MS-DOS reserves for storing bits of data that can be called upon more quickly than accessing the hard disk.

Printers normally contain a memory buffer into which the file to be printed is transferred, thus then leaving the PC free for work on some of its other applications.

Bus: the software, hardware and wiring that enables the different parts of your PC to communicate with each other. The expansion bus connects the PC to external devices.

Byte: a unit of data equal to eight bits; more understandably, one character in ASCII (plain text) takes up just one byte of space.

Cache: a form of buffer memory, a disk cache or cache memory is an area where data is stored and can be transferred rapidly rather than being called up from the hard disk, floppy, or CD-ROM.

CAD: stands for Computer-Aided Design. Technical drawing on the computer.

CD-i: stands for Compact Disc Interactive. A digital CD-based machine developed and sold by Philips with limited compatibility with other CD-ROM formats.

CD-ROM: stands for Compact Disc Read Only Memory. Physically the same as the compact discs you play music on, CD-ROMs hold up to 600Mb of computer data, stored digitally.

Centronics: the standard interface for computer printers, named after the manufacturer.

Chkdsk: Useful, but not foolproof, DOS command which when used regularly, will check your hard disk for file errors.

CLI: stands for Command Line Interface. A system, such as DOS, in which you must type in the correct commands to get the computer to perform.

Clip art: this is usually found in art packages or desktop publishing programs, these are files of images saved in the program's preferred format.

Co-processor: an additional processor used for auxiliary functions, especially mathematical operations.

Command.com: This is MS-DOS's command interpreter, a file which contains the bulk of the commands for MS-DOS, and without which your PC will not function.

Config.sys: a file which you create on your PC to load up device drivers for items such as a sound card, CD-ROM drive, etc, every time your machine is switched on.

Conventional memory: The first 640K of RAM, into which MS-DOS is loaded, and the place where all your programs must run from.

Cpi: stands for characters per inch. Used to describe the width of character output by a printer.

Cps: stands for characters per second. Used to describe the speed of printer output.

CPU: stands for central processing unit.

Generally means the processor inside your PC, but it's often used loosely to refer to that and the motherboard as well.

Digital: making use of binary digits, eg, a device, such as a computer in which data is stored as binary numbers, as opposed to analogue devices (see above).

Digitisation: the act of turning non-digital data into a form understood by computers (ie, in binary digit form). Most often used at present to describe graphics (taken from film, paper, slides, etc) or sound (taken from tape) which is scanned (see below) into a computer-compatible form.

Directory: Your PC files can be grouped together in directories on a hard or floppy disk to make easier to sort them or find them.

A common analogy is to compare the files with documents, stored in folders (directories) in a filing cabinet (the hard disk).

DOS: stands for Disk Operating System. A generic term which can refer either to MS-DOS or DR-DOS (see below).

DOS shell: a pseudo-graphical user interface (see below) included with MS-DOS v4 and later. This presents your filing system in tree-structure form and can make it easier to find, sort, copy and move files than typing commands at the C:\ prompt.

Dot matrix printer: printer which produces output by firing pins through an inked ribbon.

Download: to transfer data from a bulletin board system or central database on to your own computer.

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GLOSSARY

Dpi: stands for dots per inch. A way of describing the density of output from the computer.

DR-DOS: stands for Digital Research Disk Operating System.
An alternative and rival to MS-DOS, with some different functions, but compatible with it.

DTP: stands for desktop publishing.
Software which enables the user to mix text, and graphics in a document to produce newsletters, newspapers and magazines.

DX: The DX sub-set of processors are the full-blown versions in their grade.
A 386DX is a 32-bit processor as opposed to the 16/32-bit 386SX.
A 486DX is a fully enabled version of the Intel 486 family.

DX2: A version of the 486 processor which does its internal calculations at twice the speed of the equivalent 486DX.

EGA: Enhanced Graphics Adapter. PC graphics mode which succeeded CGA. Now, like CGA, virtually obsolete.

EISA: stands for Electronics Industry Standards Association. This interface is for use in 386 and 486 PCs and remains compatible with the older AT bus.

EMS: stands for Expanded Memory System.
This was the first standard enabling MS-DOS to use system memory above 640K in the PC.

Emulator: a piece of hardware or software, which can be used to enable one computer to behave like another.

Expanded memory: a form of adding system memory above 640K to the PC so that it can be used by MS-DOS, and also programs written to support it.

Expansion ports, expansion slots: the connectors in the PC into which are inserted add-ons such as sound cards, joystick cards, internal modems, etc.

Extended memory: a form of system memory above 1Mb which can be used by programs written to support it.

Format: to prepare a disk, either a floppy disk or the hard drive, so that it will accept the relevant data (ie, format a disk on the PC and it will accept PC data, format it on an Amiga and will take Amiga files etc).

Game card: or joystick card.
A board which fits into an expansion slot (see above), which a joystick can be plugged into.

Gigabyte: 1,024 megabytes.

Gouraud shading: a graphic technique in which colours are blended at the edges and rounded at the corners to give the impression of smoothness and speed when animated.

Graphical user interface: a system, such as Windows, in which you move an on-screen cursor and 'click' (usually with a mouse) on pictorial representations (icons) in order to make the PC perform commands.

Graphics card: the circuitry which drives the type of graphics and resolution (density) at which they appear on-screen.

GUI: stands for graphical user interface. See above.

Hidden file: a DOS file which has been marked as 'hidden' will not be displayed on the directory listing, and cannot normally be opened, read or deleted.

HMA, high memory area: a 64K block of memory above 640K which MS-DOS can load into with the command Dos= high after the Device= Himem.sys line in Config.sys.

Icon: a pictorial representation of a file or command on screen.

Inkjet printer: printer which works by ejecting tiny droplets of ink on the paper.

Io.sys: one of MS-DOS's two hidden system files. Needs to be present at start-up.

Joystick card: see game card.

Kermit: an old, not very advanced, protocol (method) for transferring files by modem.

Key disk: some programs require you to insert a master disk in your floppy disk drive while using the program on hard disk as a form of copy protection. This master disk is referred to as the key disk.

Kilobyte: 1,024 bytes.

Laser printer: printer which outputs in not too dissimilar fashion to a photocopier.

Main board: term for the motherboard of the PC.

Maths co-processor: a second processor in the machine, which is used to carry out mathematical functions by programs which support them.

MCA: stands for Micro Channel Architecture. An expansion bus developed by IBM, originally designed to bring the bus in line with faster 386 processors.

MCGA: stands for Multi-Colour Graphics Array, a graphics mode on some IBM PS/2 machines.

Megabyte: 1,024 kilobytes.

Memory-resident: a program which remains in memory even while other programs are running. Programs such as desktop organisers are often designed to be memory resident so that the user can switch to them at a single keypress; virus scanners usually remain in memory so that they can scan any floppy disks as they are inserted in the drive.

MHz, megahertz: the unit of frequency at which electric current cycles through the processor. Used to describe the speed of the processor.

MIDI: stands for Musical Instrument Digital Interface. A system by which electronic musical instruments can be connected to each other and to a computer, which then controls all of them.

Mini-Tower: a squat – roughly half-height – version of the Tower, where the PC itself is housed in upright casing. See Tower, below.

Modem: stands for *Mo*dulator/*Dem*odulator. A device which enables you to connect your PC to the telephone line and send and receive data through it.

Motherboard: the main board for a computer circuit.

MPC: stands for Multimedia PC. A standard minimum specification for developing and running CD-ROM software.

MPEG: stands for Motions Pictures Experts Group, a compression standard for video images.

MS-DOS: stands for MicroSoft Disk Operating System. The standard operating system for the PC. The operating system is the base program which enables you to run applications on the PC, use disks and add-on devices and organise your files.

Msdos.sys: one of MS-DOS's two hidden system files. Needs to be present on start-up.

Multimedia: the use of data from different media in the same program, eg, mixing

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problem-solving. And, perhaps more importantly, you have more flexibility in buying a PC which matches your desired specifications. You can have your machines configured to your own standards.

But there are other multiple outlets as well. Virgin Megastores has 24 outlets throughout the UK with another six planned this year. It is eventually planned that all these stores will sell a "Virgin" branded 486 PC package. But at the time of writing they are not on sale yet and customer choice does not seem to be the main priority. You buy the Virgin brand or nothing.

Makro, the cash and carry warehouse chain, also sell PC hardware in its 23-strong chain of stores. Prices are considerably lower than normal shop prices. But you cannot just turn up at these outlets and buy. You have to be registered with the store and the qualification for that is that you run a business or buy on behalf of a business.

Silica has been a well-known name in computer retail and mail order since 1978. It is currently setting up 20 outlets throughout the country specialising in PCs, peripherals and software with the promise of "understanding, advice and assistance and unconditional after-sales support". Many of these Silica outlets will be found in Debenhams stores.

There are also many independent high street dealers and chains operating throughout the land, who at their best, should have a detailed knowledge of product and be willing to discuss your individual needs and construct a system to suit you.

But there's a compromise. The appealing discounts of the large multiple stores may not be available here. And there's the problem of warranty and maintenance. The recession has not been easy to small retailers and long-term survival is not guaranteed. So make sure any after sales deals you sign will carry on should the retailer go bust.

Armed with your set of PC requirements, you can ask the retailer some simple questions about the machines you are being shown. Do not be rushed into buying. Take your time and think about it. Today's bargain offer will more than likely still be available tomorrow.

Finally, there is always mail order. A flip through the pages of any of the business-orientated computer magazines will reveal a bewildering number of mail order companies, appearing to sell a myriad of PCs — both with known brand names and some with names that you probably never heard of and never likely to again — and every conceivable peripheral, gimmick or gizmo. Then there are the manufacturers selling directly.

Now we all know that most mail order dealers are run by decent, upright people who want to earn a nice living by keeping you, the customer, happy and satisfied. And mail order remains popular, despite the fact that a number of mail order outfits have gone out of business in the last few years. So is there any way of making sure that you have picked one of the good ones?

There is the Personal Computer Direct Marketing Association, an embryonic organisation, which aims to ensure its members operate to the highest standards. It has a code of conduct, strict membership rules, a seal of approval which appears on the advertisements of members. You can contact the Personal Computer Direct Marketing Association at PO Box 48 Royston, Herts SG8 6JS,

TECHNICAL HELP

MAKING A BOOT DISK

If you're having difficulties freeing up enough memory to run a program and you're fed up to the back teeth with editing Config.sys and Autoexec.bat to no avail, an easy way out is to make a boot disk.

This is a floppy disk with just enough files on it to load MS-DOS, but not so many that it eats into your conventional memory. There are two ways to create a boot disk, one for formatted floppy disks, and one for unformatted floppy disks. All you need is the floppy disk, a sticky label and a pen.

If your floppy disk is already formatted, make sure it's blank, put it in your disk drive and then, at the C:\ prompt, type

SYS A:

This will transfer three files (four in DOS 6) from the hard drive to the floppy drive. The two system files, which are probably called Io.sys and Msdos.sys, are 'hidden' and not normally visible to a directory listing (so just take our word for it that they're copied across). The third is the all-important Command.com. The fourth, exclusive to DOS 6, is Dblspace.bin, which is also a hidden file. Once the files have copied over, your floppy disk is now a boot disk. It contains the bare minimum to run MS-DOS, while leaving plenty of memory free for running hefty games.

If your floppy disk is unformatted, you can format it and make it a system disk in one fell swoop. Put the disk in your floppy disk drive and type:

FORMAT A:/S

The format command will format the disk. The /s is called a switch, and tells DOS to transfer the three main system files to the floppy disk, making it a boot disk.

Now take the sticky label and pen and clearly label the floppy as a boot disk.

Because the Sys and Format/s only transfer the fewest files necessary to boot the system, your mouse will not be loaded, nor will a sound card or CD-ROM drive be loaded with a device driver.

You can load these separately from the C:> prompt, after using the boot disk to start up, but it's probably easier to make Autoexec.bat and Config.sys files on the boot disk itself. And the easiest way to do this is to copy over your standard Config.sys and Autoexec.bat files from your hard disk and then remove all the lines except the ones you need for the program to run, such as the mouse driver, sound card settings, or expanded memory manager lines. This at least guards against typing errors when you try to create the new Autoexec.bat and Config.sys on the floppy disk.

Note: several program manuals explain how to make a boot disk and suggest specific commands to go into the Config and Autoexec files on the boot disk — usually with regard to extended and/or expanded memory requirements specific to the program in question.

Let the manual's recommendations override your existing configuration if you want the program to work properly.

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WHAT ARE CONFIG.SYS AND AUTOEXEC.BAT?

Well, what are they, then?
Config.sys and Autoexec.bat are two files which are processed every time you switch your PC on. Autoexec.bat contains commands which precisely configure your PC. Config.sys contains commands which — in the main — set up your device drivers.

Device drivers?
Anything that has been added to the basic PC box — like a sound card, a mouse, extra memory chips, or a CD-ROM drive — counts as a device for the purposes of the Config.sys file. Each device needs a driver, ie, a software file needs to be run which loads up the device so that your PC will recognise it.

So how would I know a device driver if I saw one?
A line in your Config.sys file which reads something like:

```
DEVICE=C:\DOS\HIMEM.SYS
```

loads up the device driver for extended memory. Look out for the words DEVICE= and then the location of the file.

Anything else in the Config.sys I should know about?
Yes. If you have extra memory (more than 640K RAM) fitted in the PC, you can load some of your device drivers into the upper memory area. For example,

```
DOS=HIGH,umb
```

has put the whole of MS-DOS into an upper memory block (hence 'umb' in the command). A line stating which 'country code' you want to use helps configure the way the machine displays the time and date so that the day appears before the month,. This line will look something like this:

```
COUNTRY=044,,C:\DOS\COUNTRY.SYS
```

Country=044? Looks more like an international dialling code to me.
Yes. Uncanny, isn't it?

Finally, you may have the following two lines in Config.sys:

```
FILES=20
BUFFERS=20
```

Don't worry too much about what these mean. Some games may want the numbers to be different: 30 files, maybe, or 15 buffers.

Just change the numbers as the program suggests and reboot the machine.

Whoa — wait a minute ... how the hell do I make changes to this file?
Easy. Just load it into a word processor, or type

```
EDIT CONFIG.SYS
```

at the C:\ prompt. It's only lines of text, you see, so you can change the words or delete or add lines, then save it (Alt-F, S, if you used EDIT to load it up). Then reboot your machine and the changes you made will take effect.

Suppose I make a mistake and it all goes horribly wrong?
Ah yes, I forgot. Before you make any changes to your Config.sys file, you should always back it up. Either copy it to a floppy disk:

```
COPY C:\CONFIG.SYS A:
```

or copy it under another name:

```
COPY CONFIG.SYS
CONFIG.BAK
```

(It doesn't have to be .BAK at the end, but that will help you to remember what the file is doing there).

Now make the changes to the original Config.sys and if it doesn't work, you can always replace the new one with the one you copied earlier.

What about Autoexec.bat then?
The Autoexec.bat contains a variety of commands which are automatically executed when you switch the PC on.

Come again?
Oh, all right then. It consists of lines of commands which will tweak things such as the way your C:\ prompt is displayed, the exact layout of your keyboard — so that you get a pound sign when you press Shift-F3, for example — and it will define the precise settings for the device drivers loaded in Config.sys. Oh, and it may also load your mouse driver.

I thought you said the mouse was loaded with Config.sys.
Well, it depends. If your mouse driver is called Mouse.sys, it'll be in Config.sys. If it's called Mouse.com or Mouse.bat, it'll be in Autoexec.bat.

What do you mean, "the way the C:\ prompt is displayed"?
OK, try this: at the C:\ prompt, type the following, exactly as it appears below:

```
PROMPT IT'S NOW $t$_GIVE
ME YOUR COMMANDS_$p$g
```

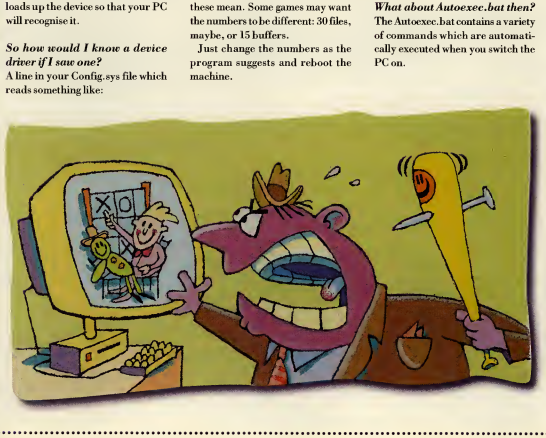
What you should have now is, instead of boring old C:\, the time, your PC at your service, and the current drive, all on three lines instead of one.

$t displays the time
$_ moves the text down one line
$p displays the current drive and directory
$g displays a > sign to separate your now completely over-the-top prompt from your commands

In practice, I think just PROMPT pg is probably enough. If you put that line in your Autoexec.bat file, in the same way that you alter Config.sys as explained above, then you will always see which directory you're in at the C:\ prompt.

Now tell me something useful, like more about the precise settings for devices.
No. I wouldn't worry too much about this, to be honest, except to be aware that they're there.

When you fit something like a sound card or CD-ROM, and run the install software that comes with it, 99 times out of 100, the install program will automatically add these lines to Config.sys and Autoexec.bat with the correct numbers. Just leave them be. Especially if the machine arrived with the devices already fitted and configured.



GLOSSARY

video, computer graphics, sampled speech, music, text, etc. Often sloppily used to refer to any CD-ROM program.

OCR: stands for optical character recognition. Software which 'reads' text scanned into the computer with a scanner (see below) and converts it into the original characters (when scanned,
the document will be saved as a graphics file rather than a text file).

Parallel port, interface: interface for parallel signals usually used to connect printers.

Patch: an add-on disk to a program which can be bought by existing users and which usually fixes a bug, or provides an update to the original program.

Path, pathname: the 'tree' of directories and sub-directories that defines the location of a file or group of files. For example, c:\wordpro\john\sample.let is the path for the file Sample.let in the sub-directory John, in the directory Wordpro, which is in the root directory.

Pentium: The name for what is logically the 80586 processor. Intel, the manufacturer, gave the chip a name rather than a number to make life more difficult for rival manufacturers.
Numbers — such as 586 — cannot be trademarked in the US but, of course, names can be.
Thus, while other companies can develop what is, in effect, also a 586 chip, they cannot call it a Pentium and reap the reflected rewards from Intel's high brand name visibility.

Pixel: stands for Picture Element. The smallest size of on-screen dot that can be directly controlled by the computer.

Processor: the chip that drives your PC, and deals with mathematical and logical operations.

Program Manager: The main screen in Windows, from which all Windows operations can be accessed.

Public domain: software designed to be distributed free of charge, with no copyright attached.

RAM: stands for Random Access Memory. This is the dynamic system memory which holds programs and data while they are being worked on.

Read-only: a file or disk whose contents can be read or copied, but cannot be changed.

Resolution: the density of dots on-screen, or in printed hard copy (or in graphic files) which determines how detailed the picture (or print) looks to the eye.
Standard VGA screens display at 640x480 pixels, SVGA at up to 1024x768. Resolution of print is measured in dots per inch — a standard laser printer prints at 300dpi.

ROM: stands for Read Only Memory. This is permanent memory, and in PCs is generally used for start-up operations — routines stored in Rom carry out the self-tests and activate DOS when you switch the machine on.

Root directory: the directory immediately under C:. See path.

SCSI: (*pron Scuzzy*) stands for Small Computer Systems Interface. The SCSI is a multi-purpose interface between the computer and peripherals, mainly disk drives and CD-ROM drives. Provides very fast data transfer.

Shareware: Shareware is actually software designed to be used and distributed freely on a trial basis, but for which users are expected to register and pay if they wish to use it regularly.
Shareware is subject to copyright.

SIMM: stands for Single Inline Memory Module.
Board with a set of memory chips for comparatively easy RAM upgrades.
Smart card: a plastic card about the size of a credit card which incorporates a microprocessor and a ROM chip and will store data and programs.

SVGA: stands for Super VGA (Video Graphics Array, see below).
A general standard describing graphics modes of 800x600 and up to 1024x768 pixels with at least 256 colours on-screen.

SX: the 'cut-down' versions of processors.
The 386SX processor is a cut-down version of the 386DX, because although it processes data internally 32 bits at a time, it only accepts and transfers data 16 bits at a time. The 386DX is a true 32 bit processor. The 486SX, however, is a 486DX without a built-in maths co-processor.

System disk: a floppy disk with DOS system files on it which will boot up the machine.

System files: the files which make up the operating system of the computer.

TLA: stands for Three Letter Acronym, much beloved of computer programmers, journalists and data processing managers.

Tower, mini-Tower: an upright casing for the PC, designed to save desk space, since it will stand on the floor.

TSR: stands for Terminate and Stay Resident, a memory resident program which you can exit from, but call up, typically with a single keypress, since it is still stored in system memory.
See Memory Resident, above.

UMB, upper memory block: smallish areas of unused memory between the first 640K and 1Mb.
You can put drivers in here by using the command DEVICEHIGH instead of DEVICE in the Config.sys file. Upper memory blocks are explained in more detail elsewhere on these pages.
Vector graphics: a graphics technique characterised by the drawing of geometric lines for precise scaling and movement.

VESA: stands for Video Electronics Standards Association.
A group of graphics card manufacturers who have determined standards for high resolution monitors and graphics adapters.

VGA: stands for Video Graphics Array. An IBM graphics mode which has become the base standard for PC colour displays.

Virtual Reality: a much abused term for computer technology which aim to simulate real life.
Typically, this involves kitting out the user in a surround vision helmet with headphones and sensor equipped gloves.

Virus: a program which has been specifically designed to alter the contents of other programs, with differing effects but usually rendering the programs unusable.

Wallpaper: the background to — usually — a graphical user interface screen, such as the screen background in Windows.

Windows: a graphical user interface developed by Microsoft for use with DOS on the PC.

Write-protect: to render a disk read-only, so that its contents cannot be altered, usually by moving a notch at the top of the disk's casing.

XA, CD-ROM XA: stands for eXtended Architecture. CD-ROM with additional video capabilities.

XGA: eXtended Graphics Array. IBM graphics mode.

XModem, YModem, ZModem: three different protocols — sets of rules — for transferring data via modem. ZModem has become the preferred standard.

XMS: stands for eXtended Memory System. See Extended memory, above.

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Q+A

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A bulletin board of my own

Q Some friends and I are thinking about setting up our own bulletin board service. I have a 486DX-33 with a 340Mb hard drive and 4Mb of RAM. Can you tell me where I can find information to tell me how to set up a bulletin board, what else I will need, how much it will cost and so on?

I am thinking of buying a Sportster 14.400 fax modem, but will this be sufficient? Is there a book that will answer all these questions and more? Please help, as I have looked everywhere and had no joy.

B Hurley
Middlesex

A *I don't know of a book on running a bulletin board, but you probably don't need one. The machine and the modem you are thinking of are very suitable for use as a bulletin board. Getting software is relatively easy. There are a number of shareware bulletin boards — try Search-Light (PDSL disks 1484A/B), RBBS (PDSL disks 1788A/B/C/D) or Sapphire (PDSL disks 3233A/B). These come complete with documentation on how to set everything up and it isn't very difficult.*

The only real problems you are going to have is justifying the phone line that will have to be dedicated to the bulletin board!

How many pins does a joystick have?

Q I recently bought the excellent Dyna Blaster game and rushed home to play it. To play it in four-player mode though, you have to plug two 9-pin digital joysticks into an adapter that plugs into the parallel port. The manual explains that the reason for this is that it constitutes the game's copy protection.

The problem is that my two digital joysticks have 15-pin connectors and won't plug into the adapter.

I have tried connecting my joysticks to my Quickshot game card, but the game doesn't recognise they're plugged in. The game card works fine however.

I have tried to get an adapter that would convert my 15-pin joysticks into 9-pin ones, but nobody seems to be able to help. If I cannot get my two joysticks to work I will have to either buy two more with 9-pin connectors or just play the game in two-player mode.

Ian Forrest
Devon

A *The difference between the joysticks you have and the joysticks you need goes a little deeper than just the number of pins on the connector. The standard joysticks used with a PC are analogue joysticks and they use 15-pin connectors. Converting an analogue joystick to a digital joystick can be done, but it is not easy or cheap and it certainly isn't just a matter of wiring up a 15-pin to 9-pin converter.*

A joystick adapter, like the Quickshot game card, allows you to connect two analogue joysticks at most. This accounts for the need to use an additional non-standard joystick interface to implement a four-player mode. Dyna Blaster could have chosen to add two extra analogue joysticks, but digital joysticks are cheaper and can often be borrowed from games consoles! So the solution to your problem is to buy a pair of digital sticks — they are not incredibly expensive and the cost of an analogue to digital joystick converter would certainly be more.

Is the 386SX obsolete?

Q I own a 386SX with a 52Mb hard drive and 4Mb of RAM. I have become increasingly worried about coping with today's latest games. I have some questions for you which, when answered, should tell me what action to take.

1) How long can I keep my machine before it becomes obsolete?

2) What is the cheapest way to upgrade my PC to a 486SX or more?

3) Is it worth buying a CD-ROM for the PC I have at the moment?

Craig Dickson
Dumfriesshire

A *I hate questions like this because I know that if I say that the 386SX is obsolete there are a lot of 386SX users who are going to feel very upset — not to mention 286 and XT owners! But the fact of the matter is that computing technology moves on and machines do very quickly become less than state of the art and then obsolete. At the moment I would advise anyone buying a new machine to keep well away from a 386SX and consider a 486SX as the minimum requirement. Mind you, the way prices are falling and the market is rearranging itself, I could well regret writing SX rather than DX by the time you read this! In this sense the 386SX is obsolete, but if you have one already then it probably still has some life left in it.*

So should you upgrade or add on a CD-ROM? This question is made more difficult by the fact that both options cost more or less the same. Personally I would not add a CD-ROM to a 386SX machine — it will increase what you can do with your machine, but not as much as upgrading to a 486SX or better. Given that you have an 80Mb hard disk and 4Mb of RAM then a motherboard upgrade should be possible for around £150. As long as your machine uses a standard size case,

swapping motherboards is relatively easy and no more difficult than fitting a CD-ROM drive.

What does SVGA need?

Q I've got a Trident 9000c SVGA board, but it only works in VGA. I have 256K of Video RAM. Do I need more to make it work in SVGA? I can make VESA work, but it doesn't do anything.

Richard Combes
Mirfield

A *How much memory a video board needs to run in any particular mode is something that puzzles a lot of readers. The amount of memory needed depends on two things — the resolution, ie how many horizontal dots by how many vertical dots, and how many colours you can display at each point. The highest VGA resolution is 640x480 in 16 colours and this only needs 256K. Actually it only uses 150K and so even with 256K of video RAM you can work at higher SVGA resolutions, ie specifically 800x600 in 16 colours and 1024x768 in four colours.*

If you want to use 640x480 in 256 colours, 800x600 in 256 colours or 1024x768 in 16 colours you need 512K of video memory. If you want to work at 1024x768 in 256 colours then you need 1Mb of video RAM. Of course, there is nothing to say that any given video card will work at these resolutions, but if it doesn't have the necessary video RAM then it definitely will not!

Upgrading is usually just a matter of adding memory chips and perhaps altering a jumper to tell the hardware that they are present — you need to look at the manual to find out exactly how to do it. You also need to make sure that the monitor that you have will support the higher SVGA resolutions — ie it has to be an SVGA monitor, not just a VGA monitor. However, even if the monitor is just VGA you can still upgrade to 256 colours at 640x480 by adding Video RAM.

As long as you are using an SVGA monitor you could try the higher resolutions that work with 256K by simply selecting the appropriate mode and video card when installing or setting up software.

Using old drives

Q I have recently got hold of some really crusty old 8088 PCs from work; they have each got a 70Mb hard drive, one of which I would like to try and install into my Ambra DX-33 MT. The problem is that they are definitely not IDE drives. The model number on them is Seagate ST-124 and they each have a controller card with two ribbon cables which plug into two corresponding edge connectors on the back of the drive, I think they may be old MFM drives. Is there any way I will be able to get these drives and interfaces working? Please, please help!

Michael Kirk
Herts

A *Yes, these are MFM drives and you will need an MFM hard disk controller to make them work at all. Mixing MFM and IDE drives is theoretically possible, but it usually doesn't work. Essentially what you have to do is set the controller card to work at the secondary hard disk address — but in practice there can be other problems. If you still feel like trying to mix IDE and MFM drives you will also need to know that the ST-124 has 615 cylinders, four heads and 17 sectors per track and no compensation. Given these figures I make the size of the disks 20Mb not 70Mb — still interested! Ah, it seems only five minutes ago that MFM drives were state-of-the-art and 20Mb more storage than you could possibly need . . .*

Starting a shareware company

Q At school we have been asked if we would like to do a Mini Enterprise. This involves starting our own business. My friend and I were thinking of running a shareware company where we would sell shareware. Would we need a licence to do this and if so, how do we go about getting one?

Adrian Perssene
Solihull

A *The principle of shareware is that the companies that produce the software encourage anyone to pass it on so that other users can try it out. Of course shareware isn't free — if you like it and want to use it, you have to pay for it. If you want to be a shareware distributor then most shareware producers say that you can make a small charge for passing their software on. Typically you can charge a small price per disk to cover costs and a small profit for your trouble — but you cannot charge large sums and you certainly cannot keep the registration fee for the software — it has to be passed on to the original author. So all you need to do to start up as a shareware distributor is a source of shareware programs and some way of advertising and duplicating disks. Make sure you read the licence terms of any software that you decide to offer, just to check that it really is shareware!*

Cheap motherboards?

Q I read with interest your response to Peter Johnson's letter about motherboard swaps. You quote around £100 for a motherboard swap to a 486SX 25 and a processor swap for £161. Just one question — where from? I think £100 seems a good deal, especially as, with my current budget, I am looking at a Cyrix upgrade 386 to 486 chip which is hardly a long-term solution.

Mark Collins
Hunto
Cambridgeshire

A *I try not to get involved in quoting real prices from real dealers because prices change quickly and I don't want to be accused of showing favouritism. When I want to quote a price I generally flip through some adverts and try to get a feel for what is being asked for something. Usually I find that there is a good spread of prices and I try to quote the lowest price I see from someone I know is reputable. In the case of motherboards there are lots of people selling 486SXs for around the £100 mark and it really would be unfair for me to pick one or two out. But just to prove that this price level isn't wishful thinking, try Evesham Micros (0386 76550), which has a special offer at the moment of £79.00 for a 486SX VESA bus motherboard. As to the processor upgrade, again you can buy Cyrix processors from many places, but try Watford Electronics (0582 487777) for a 386SX-20-486SX upgrade processor for £169. If you want to upgrade a 25MHz device then it will cost £192.*

Personally I would not choose to upgrade the processor — a motherboard upgrade is always better value in terms of what you end up with. Only opt for the a processor upgrade if the machine is an odd or out of the way model and getting a compatible motherboard would be difficult, or if you don't wish to take your machine to pieces.

32-bit file access problems

Q I have recently purchased a copy of Windows for Workgroups v3.11 for its networking and 32-bit file access capabilities. I have a 486 DX33 with 8Mb RAM and a 170Mb Seagate IDE hard drive. I am also running Quarterdeck's QEMM 7 memory manager. The problem I have is that when I try to enable the 32-bit file access option in the 386 enhanced section of the control panel, Windows displays a message telling me that it is unable to find the file lfshlp.sys in the Windows directory, or that I have started the network before running Windows or that my hard drive isn't compatible with 32-bit file access. What's it talking about?

David Barthorpe
Essex

A *One of the supposed advantages of Windows 3.11 is that it supports 32-bit disk and file access. The 32-bit file access is the basis for the filing system incorporated into Chicago — which will one day grow up to be Windows 4.0. In theory this filing system should provide a big speed increase in disk and general system activity. In practice what happens seems to depend a lot on the luck of the draw. It seems to have speeded my system up by about 20 per cent, but equally it has slowed a friend's machine so much that she had to disable it. This doesn't seem to be an isolated incident because there are lots of messages on the Internet about it.*

OK, so back to your specific problem. The 32-bit filing system works by doing all disk access in protected mode and this means that if you have any configuration problems it is likely to find them. The feature is so new that I can't say that I have seen the error message you quote, but there are a number of possibilities. Your Config.sys file should contain the line

```
DEVICE
=C:\WINDOWS\IFSHLP.SYS
```

and it doesn't. As this is the file the error message refers to, it is worth adding it and trying again. Also looking at the Config./Autoexec file listings you sent me. I have to say that they look complicated and I can see at least one error! The Autoexec.bat file loads SmartDrv twice — once high and once low. This too could be enough to cause the problem. In fact if you are going to use 32-bit file access you don't actually need SmartDrv at all, so you could take both lines out. Finally I notice that you are using QEMM — an excellent memory manager — but when things don't work you have to suspect anything that isn't 100 per cent standard. I would try using EMM386 in its place and see if you can get it working. Given your hardware, the 32-bit file access should work perfectly.

Popping sounds

Q I currently own a 486 DX2/50 with 8Mb RAM, Sound Blaster 16 and Panasonic 562 CD-ROM Drive. Overall I'm more than happy with my system but I've noticed that on the digitised speech sections of some CD games

Q&A UPDATE

The BIOS and its set-up

No, it isn't a new brand of natural yoghurt — the BIOS is an essential component of every PC and yet it lurks deep inside the machine, only to be considered when things go wrong. This is, of course, how it should be, but things connected with the BIOS do have a nasty habit of going wrong.

BIOS stands for Basic Input Output System and it is a chunk of ROM — Read Only Memory — that contains software that allows applications programs to use your machine's hardware without having to know much about it. The BIOS is the standard interface between your machine's hardware peculiarities and software that wants to make use of it. It is what makes your machine a standard PC.

Its role as a standardiser is where things sometimes go wrong. Not all BIOSes are created equal and the software that has been put into the BIOS has been evolving over the years. What this means is that when new applications meet old BIOS — there is sometimes trouble. Windows is the best example, in that it made extensive use of some very obscure BIOS facilities and as a result, lots of users who thought they had 100 per cent standard machines soon found that Windows proved otherwise.

If your machine has an old BIOS then the only solution is to upgrade the BIOS — but this is a surprisingly technical and expensive business. The reason is that a BIOS is tailored to the motherboard that it works in and so you have to find the right BIOS for your machine. If you bought a well-known make then the manufacturer should be able to supply the correct part, but if you are one of the many who bought lesser known makes then you are probably on your own. Given that a BIOS is expensive and has to be tailored to the motherboard, a much better way of replacing an old BIOS is to upgrade the motherboard — almost as cheap and a lot simpler!

Another role that the BIOS plays is that it looks after the very low-level configuration of your machine. Long before the Config.sys or Autoexec.bat file gets a chance to alter your machine, the BIOS has set its basic operating modes. The BIOS has to know about the type of hard disk you are using, what floppy drives are installed, how much memory your machine has and so on. It also tests all this hardware before allowing the machine to start up. The problem is that the BIOS has to be told all about the machine it is going to manage. Normally the manufacturer does this for you before the machine is delivered, but there are two occasions when you need to know how to do it.

The first is obviously whenever you make changes to your machine. For example, if you fit a new disk drive you need to inform the BIOS of its type. The second is less obvious to the innocent user and can take many by surprise. The BIOS keeps all its data in a special area of memory that is kept alive, even when you switch the machine off, by a small battery. If anything happens to disrupt the power supplied by this battery while the machine is switched off then the BIOS forgets! If you are lucky the interruption in battery power will have been temporary — a bad connection say — but the battery does eventually fail completely and then you have to replace it. I do know of users who in this situation have replaced the entire motherboard thinking that it was broken. This is one case where a motherboard replacement is overkill — a new battery is cheaper, although it can prove difficult to find the right type.

If the BIOS has lost its memory, or if you need to enter some changes to the configuration, then you need to use the BIOS set-up program. The BIOS set-up program isn't difficult to use — once you have found it! Some machines have a BIOS setup supplied on disk and you have to find the disk and run the program. Most machines, however have the Set-up included in the BIOS and to run it you simply have to know which keys to press. Most BIOSes will give you a clue what keys to press when the machine first starts up. If you read the screen as your computer comes to life you might notice a message along the lines of "Press Del to run BIOS set-up".

Once you discover which keys to press, do so before the machine starts and you will find yourself in the BIOS set-up. Most of its options will be obvious if you read the messages carefully.

Don't change anything you don't understand and do make a note of all the settings. Do this even if you have no intention of changing anything, because you will need to know what they were should the battery ever fail . . .

■ Mike James

(Megarace, Return to Zork) I can hear a loud popping noise from the speakers. I've checked all of the connections between the CD drive and the sound card and I also checked for any IRQ conflicts, but everything is fine. I'm sure there's nothing wrong with my drive because other games I have with speech work fine. What is causing the popping sound and how can I get rid of it?

Steven Smart
Chelmsford

Digital sound is created by sending a stream of values to the sound card which uses them to re-create the original sound signal. In principle the sound quality should be very high, but there are a number of reasons why this system sometimes fails, all of which come down to values being lost from the data stream.

If the CD-ROM drive, the processor, or some other hardware component cannot keep up with the demand for data then sections of the sound data will be lost. This doesn't have the same effect as losing a moment of analogue sound signal — ie a silence where there should be sound — because the loss of a digitisation value causes the output of the sound card to change abruptly when a data value is finally delivered to it.

In other words, the loss of sound data introduces, jumps in the audio signal and this is what you hear as the loud popping noise.

This noise is not only annoying, it can actually damage a hi-fi system if you choose to connect the output of your sound card to it.

So what's the solution?

At the moment the way that games deal with digitised sound isn't uniformly good, in that some drop audio data more easily than others. If you hear a popping noise on all digitised sound then you probably need to think about speeding up your system.

You might just get away with increasing the size of the buffers allocated to the CD-ROM drive. If the problem only occurs on some games, as in this case, then it might be worth increasing the buffer allocation, but it might just be that the games don't handle the digitised sound very well.

A possible cure for slow video?

In September's Q & A section Stuart Brotherston asked a question related to "Slow Graphics". In your reply there is one possibility you didn't mention — Video ROM shadowing.

Is it possible that this has been turned off in an effort to save memory?

John Barnet
London

A good point! I can only claim that I didn't think of it because Video ROM shadowing is turned on by default in nearly all cases and you have to try quite hard to turn it off. The basic idea is that the routines that control the video card are stored in ROM on the video card. Most software calls these routines often and so how fast they work can have a big impact on speed. The trouble is that ROM can be up to 100 to 1,000 times slower than RAM and this isn't good.

The solution to the problem was thought up some time ago — shadowing. Any ROMs that are in the system are copied to RAM and this is then moved to the spot that they first occupied.

This is done when the machine is first started up and it is controlled by the BIOS setup.

You can generally opt to shadow the main BIOS ROM and/or the Video ROM.

Some expert users believe that shadowing the Video ROM isn't necessary and they might as well not waste the RAM on it. This usually isn't true and if you do turn shadowing off you need to check what effect it has on speed — it can slow the machine down by 100 per cent and video speeds down by 400 per cent or more!

So find out how to get into the BIOS set-up and check that shadowing is enabled for video ROM.

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Letters

PC Review welcomes your opinions on just about any PC-related subject. We reserve the right to edit your letters, and we'll also assume correspondence is for publication unless you state otherwise.

LETTERS

Software prize WINNER

Help us 'idiots'

Greetings from a senior citizen who came to computing at a very late stage in life, but who enjoys every moment of it. Well, nearly every moment!

About 18 months ago I bought a PC — a 386SX 25MHz with 2Mb RAM and a 100Mb hard disk. My wife and I do a great deal of work on it, running WordPerfect, a database, a DTP package, a graphics package, and so on, and in general the PC copes beautifully with all of it.

However, our original package came with a number of games including Wing Commander, Legend and Life & Death. But none of them would run! DGen did. Paper Boy did. Chessmaster 2100 did. Mavis Beacon did. And several games I have bought since, including 688 Attack Sub, Red Baron, BlueByte's ProTennis Tour, and Jack Nicklaus Golf Sim, all of which run very nicely too. Other games I have bought however, will not run: Strikefleet; A-Train; Silent Service II; SimCity 2000; Railroad Tycoon; The Perfect General.

And all in spite of the fact I've put in an extra 4Mb of memory on my machine. What am I doing wrong?

I've read countless magazine articles that purport to tell computer idiots like me how to use the computer's memory, make bootable disks and so on. Frankly, these articles, including those written in your esteemed magazine, are quite useless because they are not written for us computer idiots at all, but those with as good knowledge of what they are doing as those who write the articles. We computer idiots need an Idiot's Guide, something detailed right down to the last dot and comma: "Type this; press Return; now type that; press Return," and so on. Truly, it has to be that simple.

So please, for us idiots, could you let us have a real Idiot's Guide to help us configure our computers, adjust our memories, make bootable disks, and all the rest, so that we can start running all those lovely, juicy, memory-bungry, games and simulations that are out there (including your lovely cover disks)? You really would provide an enormously useful service.

Robin Carmichael
Bonnyrigg, Midlothian

I really do sympathise with the trouble you have with so-called idiots' guides, but I'd like to say a word or two in defence of us "quite useless" magazines. The real problem with the "do this, then type that" kind of instructions, is that no two PCs are exactly the same, and there are always all sorts of exceptions and alternatives to take into account. For example, we could tell you how to do all sorts of things with MS-DOS (your operating system) which might as well be in Greek if it turned out that you had an early version which didn't include all the relevant commands, or if you had DR-DOS and not MS-DOS at all.

Anyway, we do try. I hope, for example, that our disk loading instructions are clear and that at least some of the Technical Reference Guide is in as near to "do this, type that" as we can get it.

As for your specific game problems, SimCity 2000 I know requires a VESA-compatible SVGA graphics card — if your graphics card is VGA this may be the problem.

Generally, your problems could be to do with a memory configuration problem, in which case try making a boot disk as per page six of the SimCity 2000 Addendum & Quick Start Guide. We also run a Making a Boot Disk panel in our Technical Help section, although judging from your comments above it may not be much use to you ...

Mustn't grumble . . . much

For starters I will admit your magazine is excellent. OK? Now, no more Mister Nice Guy.

What's the crack with the Technical Help towards the rear of the magazine? In the August issue you printed a comprehensive guide to the little known parameters of the DOS DIR command. Jolly good, I thought. But in September's issue you printed them all again. You also printed a glossary of common jargon, you also printed that again! You covered "Making a Boot Disk" twice. "Useful products" — twice. "Re-booting" — twice. Was this a boo-boo or just padding?

In August I read your feature about Chicago and was very interested. In September, I drooled all over the follow-up article. Which makes me ask, why can't you pad the magazine with stuff like that?

I've seen letters from people trying to run a host of big name games on now defunct machines. "Should I add another two megs of RAM, or wait and buy a 386 motherboard?" If people can shell out £40 a go for games and then moan that they won't run on the pocket calculator they call a PC, then why bother answering such queries? A good addition to the new look PC Review would be a common sense page.

Speaking of which, why do you recommend desk-top style PCs in some cases when what people really need is a mini tower? Today there are so many peripheral devices one can plug in, strap on and shove up a PC, it does not bear mentioning. Who knows what tomorrow will bring? The learning curve of an average computer user is very steep. People soon find out they'd like a sound card, a CD-ROM drive, a second hard disk, maybe tape backup. Trying to introduce that lot to a cute little "slimline" cabinet would be nothing short of a gang-bang.

And . . . in the Product Directory, please mention a particular sound card or CD just once and then drop it. As for the new book reviews, a great idea. Just more variety perhaps, not five of the same.

All in all, I can't grumble. Keep us up to date with Chicago, it sounds great so far, but have you noticed how closely it resembles OS/2? Is this an unavoidable design coincidence or a ripped-off concept from the start? I think that's all for now.

Angry Bob (N A Smith)
Viborg, Denmark

The repetition in the Technical Reference Guide is neither a boo-boo, nor padding. The point of the section is to provide answers to commonly answered questions. The questions we get asked most often are "How do I make a boot disk?", "What PC should I buy?" "Have I got a virus?", and "How does disk compression work?" so they make an appearance most often on the pages. We introduce one new topic each month and rotate the rest.

As for your less than polite comments on perfectly reasonable questions which crop up in the Q&A pages, I shall leave it to other readers to respond if they feel it worth the paper and postage.

Missing modems

You did some great articles called Inside the PC (*Issues 24 to 30. Ed*). Maybe I missed it but I never read one called 'The modem'. I have just bought a far too slow modem (2400bps) for use off Internet. I really do know a bit about PCs, but I am an idiot in network-land. Could you give me the number of the issue with Internet/modem information? If not, then could you please write an article in your magazine?

Why don't you do an overall top 20 (or other top something) of PC games. If you've just bought a PC you only know about Theme Park, etc. But you will never have heard of Civilization or Underworld II. Wouldn't that be a pity?

Ad Martens
martens@knoware.nl

You didn't miss the article, because we didn't include a modem piece in the series. The reason for that was, rather pedantically, that most modems in use are outside, not inside, the PC. However, we do have a piece on modems in this issue, as well as a piece on Internet. Isn't that convenient?

Your top 20 suggestion is just as timely, since even as I write this, PC Review's annual Top 100 PC games of all time is being compiled for next month's issue.

Happy anniversary

Congratulations on a wonderful magazine, full of useful information. There is just one thing missing. What has happened to the megabytes of disk space needed in the Tech Spec section? I only have a limited amount of space on my 80Mb hard disk and I would like to know whether a game is going to take up 20Mb. Also please state whether a CD game needs to be installed to the hard disk and how much space this takes up.

Also, as PC Review is coming up to its 40th issue, I think it would be kind of nice to show us what the gaming industry was like when the magazine first started. How about including issue 1 of PC [illegible]isure, huh?

A program[illegible]ing section [illegible]uld be nice, too — I'm sure your readers could write more original games than the industry is spewing out at the moment.

David Walker and Ben Werdmuller
Oxford

We included the hard disk capacity figures at a time when many games that needed hard disk installation took up well over 10Mb. These days, games of this size are more likely to be released on CD-ROM and to be playable directly from the CD. However, I grant you that we may have been a bit premature in dropping that slot from the Tech Spec, and if a game does take up a disproportionate amount of space, we'll let you know in the review.

Promises, promises . . .

I have been reading PC Review since Issue 4 and have never felt the need to write until now.

I was reading over the feature on CD-ROMs (Issue 35) and was quite amazed by the statement "Virgin's The 11th Hour boasts the kind of heavyweight digitised footage that puts a real strain on current double-speed CD-ROM drives."

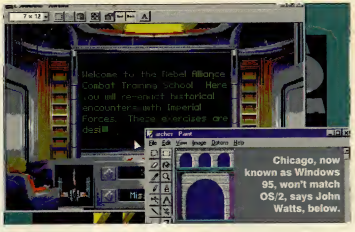
Now, I am the proud owner of a double-speed CD-ROM drive and the game Rebel Assault. I'm sure everyone was impressed by the graphics. Did this game need quad speed? Did it need triple speed? Hell, it didn't even need a double-speed.

Also can you explain what happened to the promise from software houses about CD-ROMs? As I recall, their idea of using CD-ROMs was because "CD-ROMs are easier and cheaper to produce than disks. So we won't need to charge as much."

So why are game enhancements to CD-ROMs always way above the disk-based price? Gabriel Knight for example, (a game I am currently after) costs £39.99 on disk, and £44.99 on CD-ROM. Only Infogrames appears to have kept this promise with Shadow of the Comet.

Richard Law
Rochdale, Lancashire

We too looked at this question of ever-increasing CD-ROM drive speeds in Issue 35, and came to the conclusion that you shouldn't need to upgrade to triple or quad speed drives just yet. As for the price of CD-ROM software, I suspect companies are going to argue that while prices may not have fallen, you are now getting much more in the way of game, graphics, sound and presentation than, say, a year or so ago. And I don't know exactly why games are cheaper in the US — just as I don't know why their CDs (audio) are cheaper, clothes are cheaper, petrol is cheaper (OK, so that's the extra duty we pay on it), cars are cheaper, and so on.



A price to pay

This is in answer to Dan Wasson, USA, and his letter Only in America . . . (about cheaper game prices in the US compared with the UK).

Here in Norway a disk game costs around £50 and CD £60. That's no problem for me because I buy all my games on mail order from Special Reserve or other English shops. But I have a spending limit, because if it costs more than £25 I have to pay Norwegian VAT — 22 per cent plus £6 extra. When I ordered Battle Isle 2 I had to pay an extra £15.

Upgrading my PC was pretty expensive because I paid £300 for the Sound Blaster AWE32, £180 for Roland MA-7 speakers, and £220 for a double-speed CD-ROM drive. So you in England should not complain about your prices.

Jon Halvor Stridsklev
Greanaker, Norway

Ah, Mr Law (Promises, promises above), the plot thickens.

New operating system? You got it

So you'd be rich if you were paid for all the slippage in software delivery? And now your first beta version of Cbicago has gone AWOL and will appear at least a month late.

Well, as they say, if you're going to Chicago, don't forget to put your clocks back two years. I mean, there is a real 32-bit system out there already, and you don't have to wait for Microsoft to grind away for another age to try to cobble one together — especially, as you say, it's likely to be bug-ridden.

Take Steve Boxer's wish-list. True foreground/background multi-tasking? Multi-threading? Prioritised tasking? You got it. Full 32-bit? You got it. Drag 'n' drop? Context specific help? More space for your DOS progs? You got it. High performance file systems? PCMCIA support? Full virtual memory support? Multimedia? Full motion video? Multiple jobs and movies together? SVGA, XVA? Choice of operating systems from your hard disk on boot-up? You got it. You've even got full support for Windows 3.1, if you gotta stay there for part of your life. Though, of course, you can run that world along with all others at the same time — this is an operating system, remember? Oh, and yes, it does run SimCity 2000.

What's it called? Oh, all right then — it's called IBM OS/2 and it's version 2.1 and it's about £95. Comes on CD-ROM or disks if you prefer.

Stop wishing and get a copy, Steve.

John Watts
Kingston-upon-Thames, Surrey

Chicago lowdown

I would like to make a point about your recent review of Chicago, aka Windows 4. But before whinging on, I would like to say that precisely the same worries are afflicting me as regards to playing games in Windows 4. Full marks to you for running an article on such a topic but, really, couldn't you get someone to check out the situation properly. Now I am not knocking Mike James who wrote the piece. I am sure he's a great bloke, but . . .

Eleven games! Two of them were written and designed in the same way, ergo, if one worked it would be fairly safe to assume the other would. He says he did this over the weekend — and I can imagine how many games you journos must have stashed away. Couldn't you have thrown everything you had at it? A definitive review, including thrashing out the DOS 4 whatever with Theme Park — especially as Doom uses the same memory management program.

It's personal now I know you've got a beta copy of Windows 4. Arena — The Elder Scrolls, Sim City 2000, TFX, MicroProse's 1942, Return to Zork (CD version), Dracula Unleashed and, finally, anything from Origin, post Strike Commander. Also, you didn't mention about speed degradation, if any.

I have got just one more point or more a question, really. Your article on the console (for want of a better word) board plug-ins. If I read you right, they would take over the processor's job for their games, which effectively means my 486DX would be given a new lease of life. So in the case of the CD-i, for example, once The 11th Hour has been ported over to that format with MPEG video, then I wouldn't require a Pentium x2 with ReelMagic plug-in, or have I missed something really obvious? I could get all the MPEG CDs of whatever format I wanted and play them. That sounds the choicest upgrade I've heard of in a long time.

Tony F Paulazzo,
Beddington, Surrey

If we had tried out every single game we could lay our hands on, we'd be about a quarter of the way through by now and still the list we ended up with wouldn't be anything like comprehensive. Nor entirely fair either, seeing that it was a beta version. When we get our hands on a final release version, you can rest assured that we'll test it hard. However, we chose the games that Mike did try out deliberately — a mix of new and newish with some old classics that quite a few people still play.

On the subject of console boards, Martin Klimes writes: Well yes, and unfortunately no. Your processor may be getting a new 'lease of life' in some ways, but the console cards don't actually take over the motherboard's job. Each card has chips that enhance the power of your system in various ways — faster polygons, smoother sprites, or whatever, but your processor is still needed for the basic nitty-gritty. The faster your processor, the better... not that a 486 is a bad machine, though!

New lease of life

Great article on IDE CD-ROM drives in PC Review Issue 34. I have a 386DX machine (vintage 1988) and I am too cheap to upgrade to a Pentium. I have a Cyrix 486DX 20/40 upgrade and am looking for other ways to stretch the life of this machine until affordable Pentiums or Power PCs are available. IDE CD-ROM drives look like another inexpensive way to enable my machine to go another year or two.

Can you tell me if you tested IDE CD-ROM drives on the Hewlett-Packard QS/20? The QS/20's BIOS is by Phoenix, I believe.

Jim Slupe
hpdmd48.boi.hp.com

John Bennett replies: no, we didn't test the IDC300 on that specific Hewlett Packard PC, but we did test it with a number of other PCs with Phoenix BIOSs.

The point I made about compatibility was fairly speculative, in that we had no hard evidence of problems of that sort. Bluepoint is so confident about BIOS support that I believe the company is offering a compatibility guarantee. Your best bet is to contact Bluepoint directly, on (0908) 277007.

Unfair to Sierra

Thank you for a truly interesting magazine although, being a true Sierra fan, I wish to comment on what was said on page 81 of July's issue in Budget Games.

I find your paragraph on King's Quest III totally unfair. I quote: "It does not compare well with today's PC offerings." If you remember, back in 1986, that was the best graphics available for the PC. Also please remember in future that many people enjoy the King's Quest series and we look forward to more.

But it's not just King's Quest, it's also Police Quest, Leisure Suit Larry through to Space Quest. I have read all of your reviews on Sierra games and I believe PC Review does not give Sierra enough credit for its work — except for Gabriel Knight and Police Quest 4, which got quite high ratings.

In 1993, when King's Quest 6 was first released, it sold over one million copies. This volume of sales for a game surely proves that there are a lot of King's Quest fans out there amongst the general public and I am sure they feel the same way about your reviews of Sierra games as I do.

From my point of view, I believe that Sierra has led the computer gaming industry since the very beginning and although you often give its games bad ratings — for example Leisure Suit Larry 6 — I look forward to every new Sierra game. In response to this I have now decided that I will avoid reading your reviews of any Sierra games until after I have finished that particular game in question.

R J Scott
Pietermaritzburg,
South Africa

Take that . . . and that!

Having been subjected to Take That's music for quite sometime now, I think that I have just come up with the perfect game to carry their name. The game in question will cover 20 levels of Doom-like action and after every four levels you confront one of the band's members.

After killing off his bodyguards first, you then get to torch the said band member with your very own flame-thrower or make him sit on a nuclear warhead (memory permitting, of course).

I've even come up with the ideal opening music. It will start with a Take That song for, say, three seconds, before cutting to gunfire, then screams, then that great intro music from Doom.

Now in relation to Sarah Quilliam's letter in Issue 35. I agree totally with what they said about ratings. I have been buying PC Review since Issue 2 and in the first 24 issues, 11 games got a prestigious nine rating and in the 11 issues that followed, 14 games were rated nine.

I admit the games are getting better but surely not so many are deserving of the prestigious nine, maybe you should review your scoring system.

Anthony Currivan
Co Limerick, Ireland

Yes, I think that games are getting better. Last Christmas we were doling out more than one 9 rating per issue and took a good hard look at each to make sure that we hadn't suddenly gone soft. We decided that the marks were fair, and certainly since then the number has dropped — though I hope it will rise again soon because Christmas is when publishers release what they believe are their best games of the year.

Incidentally, if anyone else has any good ideas for games which would sort out any of their pet hates, do let us know!

COMPETITION WINNERS

Intel Overdrive (Issue 34)

Answers: 1) b — co-processor; 2) b — doubles the processor speed; 3) a — Intel

The first prize of an Intel DX2 66 Overdrive processors goes to Richard Haseltine, of Crawley Down, Sussex.

Runners-up prizes of Intel SX2 66 Overdrive processors go to Gary Binyon, of Erdington, Birmingham, and J King, of London N10.

Roll up, roll up (Issue 34)

Answers: a) haunted house, b) ghost train, c) parasol chairs

The first prize, which is a totally wonderful trip to the American Adventure theme park, goes to Adrian Skeates, of Farnborough, near Bath.

The following runners-up each get a copy of Theme Park: Ben Rogers, of Cumberworth, near Alford, Lincs; Alan R Dempster, of Sacriston, Co Durham; Captain R Tallis, of BFPO 30; Thomas Betts, of Backwell, Bristol; Martin Beasley, of Biggleswade, Beds; Louisa Michael, of Grange Park, London N21; Tor Iveroth, of Munso, Sweden; Ann McAusland, of Oadby, Leics; C Rayment, of Abu Dhabim, and Stuart Marshall, of Cairneyhill, Fife.

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NEXT MONTH

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Now in its fourth soaraway year: PC Review's annual guide to the very best in PC entertainment is presented for your delectation and dissection. How many of these prime cuts of PC gaming are in your collection?

Interactive music

David Bowie, Peter Gabriel and the artist formerly known as Prince, are just a few of the most prominent of a number of music artists producing 'interactive' music CD-ROMs. Is this a whole new form of entertainment, or just another bandwagon to be boarded? Read our special report to find out what the musical biz plans to do in the CD-ROM market.

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Go back to your roots

PC programs can help you to trace back your family tree and keep records of your ancestors. Paul Boughton, descendant of ancient database providers (on his mother's side), produces this guide to using genealogy software and chooses the best buys.

MPEG cards

The RealMagic card is no longer alone — there are now several MPEG cards offering TV quality full-screen, full-motion video on your PC. We round them up, give them a good thrashing and pick out the survivors.

The affordable Pentium

Pssst! Want a Pentium PC for under £1,500? We've got one. It's by MJN Technology and we're reviewing it next month*.

AND

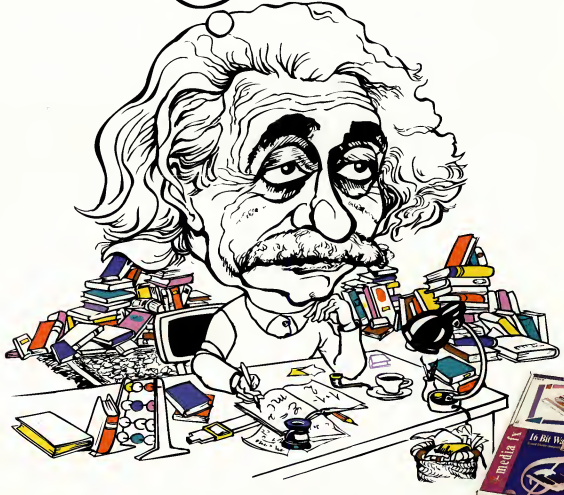
Games

Cross your fingers, and keep them well-crossed for Bullfrog's Magic Carpet, which we hope to bring you in all its glory next month. Plus Under a Killing Moon (again!), Hokum KA-50, Dragon Lore, EA's creepy Noctropolis, and October's cover disk special Transport Tycoon.

*** We're also reviewing that affordable quad speed CD-ROM drive we talked about on this page last month. Honest.**

PC Review December 1994. In the shops on November 15th.

NB Contents may be subject to change.



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